



**The Abbey
School**

Knowledge Organiser

Year 9 Term 4

2023 - 2024

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*BIG QUESTIONS

What makes an effective piece of creative writing?

What is a narrative arc?

What makes an effective narrative viewpoint?

How can language techniques be used effectively?

How can structural techniques be used effectively?

What makes an effective setting?

What makes effective characterisation?

What is an effective novel opening?

How can plot be developed successfully?

What is a successful planning strategy for descriptive writing?

How can the senses be used effectively?

How can writing be edited successfully?

Assessment Objectives

A05: Communicate clearly, effectively and imaginatively, selecting and adapting tone, style and register for different forms, purposes and audiences.

Organise information and ideas, using structural and grammatical features to support coherence and cohesion of texts.

A06: Use a range of vocabulary and sentence structures for clarity, purpose and effect, with accurate spelling and punctuation.

Mark scheme

Level 4 **Compelling, convincing**

Level 3 **Consistent, clear**

Level 2 **Some success**

Level 1 **Simple, limited**

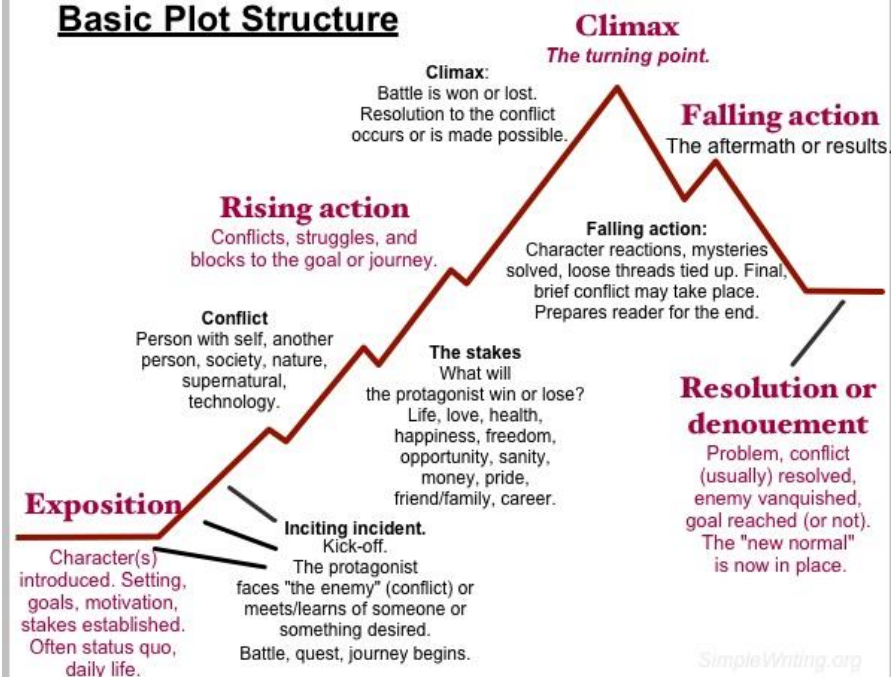
What to expect

As a stimulus for writing, there will be a choice of scenario, written prompt or visual image.

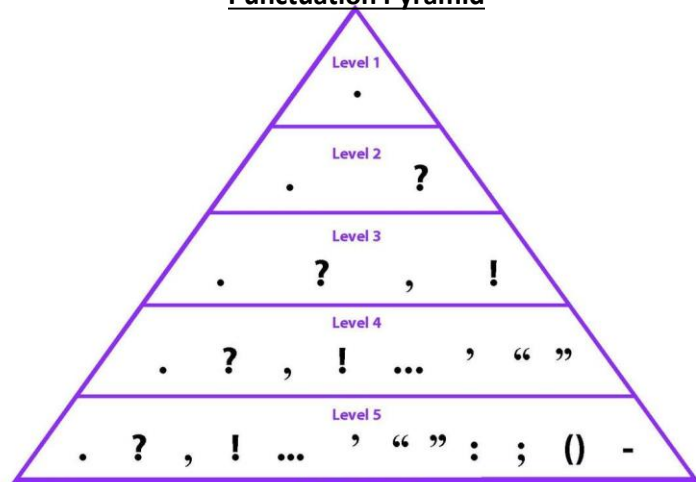
Narrative and descriptive writing has many crossovers:

- **Narrative** – structures a story, or part of a story, with a pivotal moment
- **Descriptive** – focuses on the sensual experience of a situation
- **Both** can use language techniques (similes, metaphors etc.), different paragraph lengths, different sentence structures, varied punctuation ...
- ✓ **Planning** is essential!
- ✓ **Focus on the quality** of your writing not your quantity of writing. A shorter, perfectly crafted piece of writing will get higher marks than a long, uncontrolled piece.

Basic Plot Structure



Punctuation Pyramid



Creative writing commandments

1. Always plan with a clear structure
2. Choose first or third person
3. Stick to one tense
4. Show, don't tell
5. Zoom into detail
6. A range of ambitious vocabulary
7. Use the senses and other language techniques
8. Vary punctuation for effect
9. Vary pace through sentence structure
10. Smooth paragraph transitions

Sentence Starters

Start with an adverb	Suddenly, she smiled ...
Start with a verb	Glittering in the inky night ...
Start with a preposition	Down there, in the darkness ...
Start with an adjective	Red light filled the ...
Open with sounds	Crash!
Use a flashback	The memories flooded back ...
Describe a setting	The room was ...
Use a question	Why did ...
Create mystery by hinting what could be there	In the distance was ...
Use a list of three emotions	Cold, lonely and frightened ...
What can be seen, heard, smelt, tasted or touched?	I couldn't believe what ...
Start with a connective	However, his life ...

GOMASSIVE and other language devices

Group of three	He was tired, hungry and cold.
Onomatopoeia	Pop, bang, smack ...
Metaphor	The train was a bullet ...
Alliteration	The twisted, torturous trees ...
Simile	The night sky was like black velvet ...
Senses	Bursts of lemon flooded the room ...
Imagery	The ocean was emerald green.
Vocabulary	Petrified is better than frightened.
Emotive language	The girl was shivering and whimpering.
Sibilance	Silently, stealthily ...
Personification	The door slammed in rage.
Pathetic fallacy	The clouds raged overhead as the earth split beneath.
Juxtaposition	The black crows waited patiently in the crisp white snow.
Repetition	Silence. There was nothing but silence.



Sentence Structures

- Independent Clause:** A clause that can stand alone as a sentence. E.g. The cat sat on the mat.
Contains a subject and a verb.
- Subordinate Clause:** A clause that depends on an independent clause to make sense. E.g. Without turning around, the cat sat on the mat.
- Simple Sentence:** Contains just one clause (subject + verb) E.g. Tom went to the shops.
- Compound Sentence:** Independent Clause + Conjunction (FANBOYS) + Independent Clause (For, And, Nor, But, Yet, So) E.g. Tom went to the shops and he bought some bread.
- Complex Sentence:** Contains one main clause and one or more subordinate clause/s. E.g. Although it looked difficult, they still pushed on with the challenge.
- Exclamatory:** A sentence that shows great emotions. E.g. I am appalled by your behaviour!
- Imperative:** A sentence that gives commands. E.g. Get out!
- Interrogative:** A sentence that asks a question (not rhetorical questions). E.g. How much is that?
- Declarative:** A sentence that makes a declaration. E.g. She sells sea-shells.

Sentence Openers

A dverbs Quickly, Carefully, Bravely, Quietly, Slowly, Suddenly, Happily,
Describe how something is being done.

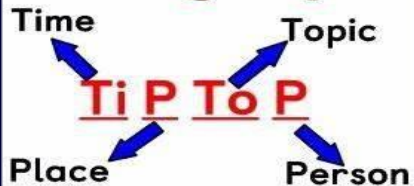
C onnectives Instead, Unless, Soon, Before, Eventually, While, However
Show a consequence or a sense of time.

A djectives Happy and cheerful, Sweet and kind, Scared but excited, Tired and weary,
Pair two describing words together with 'and' or 'but'.

R elative Pronouns Which, That (animals and things), Who (people)
Words that relate to a noun.



Paragraphs



Ti...you move to a new period of time

P ... you move to a different place/location

To ... you move from one topic to another

P ... you bring a new person into your writing, or change from one person to another - including dialogue (speech)

Homophones: words that sound the same but have different meanings

- Their** - means it belongs to them. E.g. I ate their sweets.
- They're** - short for they are. E.g. They are going to be cross.
- There** - refers to a place. E.g. I'm going to hide over there.
- Your** - refers to something that belongs to you. E.g. Your bag.
- You're** - contraction of 'you are.' E.g. You're going to win.

P repositions Inside, Next to, Above, Hidden in, Behind, Under, Past
Tells us where something is.

I ng Words Eating, Crying, Thinking, Laughing, Shouting, Smiling,
Says what the character is doing.

E d Words Worried, Defeated, Scared, Flabbergasted, Shocked,
Describes how a character is feeling.



Punctuation

- **Full stops:** remember to use a full stop at the end of every sentence.
- **Capital Letters :** make sure every name of something has a capital letter. *E.g. California has a capital letter. Also, make sure every new sentence starts with a capital letter.*
- **Apostrophes:** you can use apostrophes to connect certain words together. *E.g. It is = It's OR to express belonging or property = John's phone*
- **Exclamation marks:** used to end a sentence to show a strong feeling of emotion like surprise, anger, or shock. *E.g. I'm so frightened!*
- **Ellipses:** used to show an omission of words, a pause in thought or to create suspense. *E.g. Suddenly, there it was ... his worst nightmare.*
- **Colons:** used to precede lists or explanations. *E.g. I went to the store and bought a lot of fruit: peaches, apples, oranges and pears. Sarah wrote a story: The Hungry Fish.*
- **Semi Colons:** used to join two related independent clauses. *E.g. We made too many mistakes; we lost the game. Also, use a semi-colon instead of a comma, usually in a list. E.g. You will need many backpacking items: a sleeping bag; torch ; tent ; and pillow.*
- **Hyphens:** you can use hyphens for a number of reasons.
 - To separate sentences with added information e.g. *I enjoy English – as well as Maths.*
 - To indicate periods of time. *E.g. 2000-2006.*
 - To form hyphenated words. *E.g. self-respect.*
 - To create emphasis. *E.g. Mum loves seafood – she absolutely adores seafood.*
- **Brackets:** use brackets to indicate added information. The sentence should still make sense when removed. *E.g. I did my homework, (it took me twenty minutes) and brought it in early.*

The 7 Main Commas Rules

- 1.) Use a comma before a conjunction, (and, but, nor, yet, or, so), to connect two independent clauses.
E.g. I had an English test last night, so I revised.
- 2.) Use a comma to set off an opening phrase.
E.g. As such, I feel there is much I can learn.
- 3.) Use a comma when using quotes to separate the quote from the rest of the sentence.
E.g. Like Bob Johnson said, "It's a great day for hockey".
- 4.) Use a comma to separate adjectives in a descriptive list.
E.g. The pizza was hot, delicious and freshly cooked.
- 5.) Use a comma to separate three or more things in a series.
E.g. Of Charles Dickens' novels, I have read "A Christmas Carol", "Oliver Twist", and "Great Expectations".
- 6.) Use a comma with phrases that present a contrast.
E.g. Learning about Hemingway can be highly advantageous for students, not only in their secondary school studies, but also in their future careers.
- 7.) Use a comma to set off a parenthetical element (added information that can be taken out without changing the meaning of the sentence).
E.g. Now, many years after their time, we as a country are faced at the starting ground where these men once were.

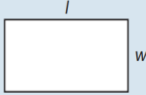
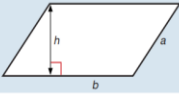

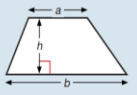


Subject: Mathematics

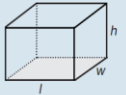
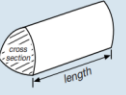

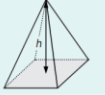
Topic: Recall Knowledge

Year / Group: GCSE F/H
Term: 1-6

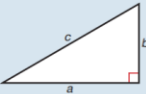
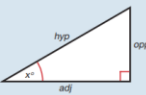
Areas

Rectangle = $l \times w$	
Parallelogram = $b \times h$	
Triangle = $\frac{1}{2} b \times h$	
Trapezium = $\frac{1}{2} (a + b)h$	


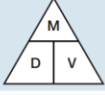

Volumes

Cuboid = $l \times w \times h$	
Prism = area of cross section \times length	
Cylinder = $\pi r^2 h$	
Volume of pyramid = $\frac{1}{3} \times$ area of base \times h	

Pythagoras

Pythagoras' Theorem For a right-angled triangle, $a^2 + b^2 = c^2$	
Trigonometric ratios (new to F) $\sin x^\circ = \frac{\text{opp}}{\text{hyp}}$, $\cos x^\circ = \frac{\text{adj}}{\text{hyp}}$, $\tan x^\circ = \frac{\text{opp}}{\text{adj}}$	

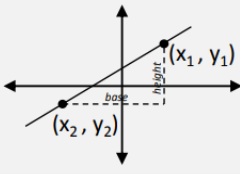
Compound measures

Speed $\text{speed} = \frac{\text{distance}}{\text{time}}$	
Density $\text{density} = \frac{\text{mass}}{\text{volume}}$	
Pressure $\text{pressure} = \frac{\text{force}}{\text{area}}$	

Gradient of a Line

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

or

$$m = \frac{\text{height}}{\text{base}}$$


Midpoint of two points

between (x_1, y_1) and (x_2, y_2) $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

Compound Growth & Decay

The amount after n years (or days, etc.) is:

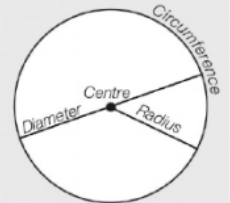
$$\text{starting amount} \times \left(1 \pm \frac{r}{100} \right)^n$$

where r is the rate of change.
The \pm means + for growth and - for decay

Literacy In Maths	Command Words
Evaluate ...	Work out and write your answer
Work out ...	Working out is required
Calculate ...	Working out is required. A calculator may be needed.
Solve ...	Work out the values
Prove ...	All working must be shown in steps to link reasons and values.
Expand...	Multiply out of the brackets
Draw...	Draw accurately with a pencil and equipment.
Explain ...	Use words to give reasons
Factorise	The reverse process of expanding brackets. Remove the HCF.
Estimate	Work out an approximate answer using rounded values.

Circles

Circumference = $\pi \times \text{diameter}$, $C = \pi d$
Circumference = $2 \times \pi \times \text{radius}$, $C = 2\pi r$
Area of a circle = $\pi \times \text{radius squared}$, $A = \pi r^2$



Area of a Sector

$$A = \frac{\theta}{360^\circ} \times \pi r^2$$

Length of an Arc

$$A = \frac{\theta}{360^\circ} \times \pi d$$

Set Notation

$$A \cup B$$

Union: in A or B (or both)

$$A \cap B$$

Intersection: in both A and B

$$P(A \text{ or } B) = P(A) + P(B)$$

$$P(A \text{ and } B) = P(A) \times P(B)$$

BIG QUESTIONS

How do we perform the 4 operations with fractions?

How can you use and apply your knowledge of percentages to the real world?

How can your ratio knowledge from year 7 and 8 help you solve problems? - H

Key Concepts 1

A **fraction** is a numerical quantity that is not a whole number.

A **decimal** is a number written using a system of counting based on the number 10.

Thousands
Hundreds
Tens
Ones
.
Tenths
Hundredths
Thousandths

8 7 6 5 . 4 3 2

A **percentage** is an amount out of 100.

These are some of the conversions that you need to learn.

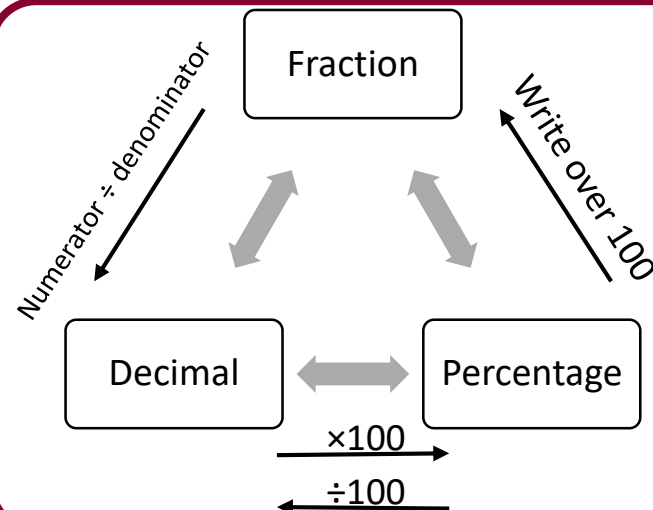
Top tips - To convert:

- Percentages to decimals divide by 100.
- Decimals to percentages multiply by 100.
- Percentages to fractions, put over 100.
- Fractions make sure the denominator is 100.

F	D	P
$\frac{1}{100}$	0.01	1%
$\frac{1}{10}$	0.1	10%
$\frac{1}{5}$	0.2	20%
$\frac{1}{4}$	0.25	25%
$\frac{1}{2}$	0.5	50%
$\frac{3}{4}$	0.75	75%

Sparx Maths

U646, U692,
U736, U475,
U544, U538,
U888, U689,
U550, U176,
U332, U533



Order the following in ascending order:

$\frac{3}{5}$ 62% 0.67 $\frac{7}{10}$ 0.665
 $\times 20 \downarrow$ \downarrow $\times 100 \downarrow$ $\times 10 \downarrow$ \downarrow
 $\frac{60}{100}$ $\frac{62}{100}$ $\frac{67}{100}$ $\frac{70}{100}$ $\frac{66.5}{100}$
 \downarrow \downarrow \downarrow \downarrow \downarrow
 60% 62% 67% 70% 66.5%
 $\frac{3}{5}$ 62% 0.665 0.67 $\frac{7}{10}$

H only

Terminating Decimals: these have a finite number of digits followed by the decimal point. E.g. 0.3, 0.42

Recurring Decimals: These have one or more repeating numbers or sequences of numbers followed by the decimal point, which keeps on infinitely. E.g. 0.123123123123....

$1.2\bar{56}$ (two recurring digits)

$$x = 1.25656...$$

$$100x = 125.6565...$$

$$100x - x = 125.6565... - 1.256565...$$

$$99x = 124.4$$

$$x = \frac{124.4}{99} = \frac{1244}{990} = \frac{622}{495}$$

FDPS

Key Concepts 1

$$\frac{x}{y} \rightarrow \begin{array}{l} \text{Numerator} \\ \text{Denominator} \end{array}$$

Equivalent fractions have the same value as one another.

Eg. $\frac{1}{4} = \frac{2}{8} = \frac{3}{12}$

Calculate $\frac{4}{5}$ of 65:

$$65 \div 5 = 13$$

$$13 \times 4 = 52$$

Divide by the denominator

Multiply this by the numerator

$\frac{4}{5}$ of a number is 52, what is the original number?

$$52 \div 4 = 13$$

$$13 \times 5 = 65$$

Divide by the numerator

Multiply this by the denominator

Order these fractions in ascending order:

$$\begin{array}{cccc} \frac{2}{5} & \frac{1}{2} & \frac{5}{6} & \frac{7}{15} \\ \downarrow \times 6 & \downarrow \times 15 & \downarrow \times 5 & \downarrow \times 2 \end{array}$$

$$\begin{array}{cccc} \frac{12}{30} & \frac{15}{30} & \frac{25}{30} & \frac{14}{30} \end{array}$$

$$\textcircled{1} \quad \textcircled{3} \quad \textcircled{4} \quad \textcircled{2}$$

To be able to compare fractions we must have a **common denominator**

Key Words

Fraction
Equivalent
Reciprocal
Numerator
Denominator
Improper/Top heavy
Mixed number

Key Concepts 2

An **improper fraction** is when the numerator is larger than the denominator e.g. $\frac{20}{12}$

Converting from a mixed number into an improper fraction:

$$2\frac{3}{5} = \frac{(2 \times 5) + 3}{5} = \frac{13}{5}$$

A **reciprocal** is the value that when multiplied by another gives the answer of 1.

Eg. $\frac{1}{8}$ is the reciprocal of 8.
 $\frac{2}{5}$ is the reciprocal of $\frac{5}{2}$

$$1\frac{2}{3} + 2\frac{1}{4}$$

$$= \frac{5}{3} + \frac{9}{4}$$

$$= \frac{20}{12} + \frac{27}{12}$$

$$= \frac{47}{12}$$

$$= 3\frac{11}{12}$$

Convert into an improper fraction

Find a common denominator

Convert back into a mixed number

$$2\frac{2}{3} - 1\frac{1}{4}$$

$$= \frac{8}{3} - \frac{5}{4}$$

$$= \frac{32}{12} - \frac{15}{12}$$

$$= \frac{17}{12}$$

$$= 1\frac{5}{12}$$

$$1\frac{1}{3} \times 2\frac{3}{4}$$

$$= \frac{4}{3} \times \frac{11}{4}$$

$$= \frac{44}{12}$$

$$= 3\frac{8}{12}$$

$$2\frac{1}{3} \div 1\frac{3}{5}$$

$$= \frac{7}{3} \div \frac{8}{5}$$

$$= \frac{7}{3} \times \frac{5}{8}$$

$$= \frac{35}{24}$$

$$= 1\frac{11}{24}$$

Find the reciprocal of the second fraction....

...and multiply

Fractions

Percentages

Key Concepts 3

Calculating percentages of an amount without a calculator:

10% = divide the value by 10
1% = divide the value by 100

Calculating percentages of an amount with a calculator:

Amount \times percentage multiplier

Calculating percentage increase/decrease:

Amount \times (1 \pm percentage multiplier)

Per annum is often used in monetary questions meaning **per year**.

Interest is earned on money saved or borrowed and is a percentage of the amount.

Depreciation means that the value of something is going down or reducing.

Calculating a percentage – non calculator:

Calculate 32% of 500g:

$$\begin{aligned} 10\% &\rightarrow 500 \div 10 = 50 \\ 30\% &\rightarrow 50 \times 3 = 150 \\ 1\% &\rightarrow 500 \div 100 = 5 \\ 2\% &\rightarrow 5 \times 2 = 10 \end{aligned} \quad \begin{aligned} 32\% &= 150 + 10 \\ &= 160\text{g} \end{aligned}$$

Calculating a percentage – calculator:

Calculate 32% of 500g:

$$\begin{aligned} \text{Value} &\times (\text{percentage} \div 100) \\ &= 500 \times 0.32 \\ &= 160\text{g} \end{aligned}$$

Percentage increase / decrease:

A dress is reduced in price by 35% from £80. What is its **new price**?

$$\begin{aligned} \text{Value} &\times (1 \\ &- \text{percentage as a decimal}) \\ &= 80 \times (1 - 0.35) = £52 \end{aligned}$$

A house price appreciates by 8% in a year. It originally costs £120,000, what is the **new value** of the house?

$$\begin{aligned} \text{Value} &\times (1 \\ &+ \text{percentage as a decimal}) \\ &= 120,000 \times (1 + 0.08) = £129,600 \end{aligned}$$

Reverse percentages: This is when we are trying to find out the original amount. **H - Only**

*A pair of trainers cost £35 in a sale. If there was 20% off, what was the **original price** of the trainers?*

$$\begin{aligned} \text{Value} &\div (1 - 0.20) \\ &= 35 \div 0.8 = £43.75 \end{aligned}$$

*A vintage car has increased in value by 5%, it is now worth £55,000. What was it worth **originally**?*

$$\begin{aligned} \text{Value} &\div (1 + 0.05) \\ &= 55,000 \div 1.05 = £52,380.95 \end{aligned}$$

Simple interest:

Joe invest £400 into a bank account that pays 3% **simple interest** per annum. Calculate how much money will be in the bank account after 4 years.

$$\begin{aligned} 3\% &= £4 \times 3 \\ &= £12 \\ 4 \text{ years} &= £12 \times 4 \\ \text{Interest} &= £48 \\ \text{Total in bank account} &= £400 + £48 \\ &= £448 \end{aligned}$$

Compound interest: **H - Only**

Joe invest £400 into a bank account that pays 3% **compound interest** per annum. Calculate how much money will be in the bank account after 4 years.

$$\begin{aligned} \text{Value} &\times (1 \pm \text{percentage as a decimal})^{\text{years}} \\ &= 400 \times (1 + 0.03)^4 \\ &= 400 \times (1.03)^4 \\ &= £450.20 \end{aligned}$$

Percentage change **H - Only**

Joe spend £400 on items to sell in his shop. He makes a total of £500 in sales. What is his percentage profit?

$$\begin{aligned} \text{Percentage profit} &= (\text{change} / \text{original}) \times 100 \\ &= \frac{500 - 400}{400} \times 100 \\ &= \frac{100}{400} \times 100 \\ &= 25\% \end{aligned}$$

Ratios – H only

Key Concepts 4

An amount can be divided into a given ratio.

Red : Green
1 : 3

For every 1 red there are 3 greens.

A ratio can be converted into fractions.

Red : Green
1 : 3

$\frac{1}{4}$ are red and $\frac{3}{4}$ are green.

To calculate the **value** for a single item we can use the **unitary method**.

When working with best value in monetary terms we use:

$$\text{Price per unit} = \frac{\text{price}}{\text{quantity}}$$

In recipe terms we use:

$$\text{Weight per unit} = \frac{\text{weight}}{\text{quantity}}$$

A woman has £400. She is going to split it between her two children in the ratio 2:3. How much does each child receive?

2 : 3

No. of boxes (2+3) →

400 ÷ 5 = 80

£160 £240

Diagram showing boxes: 2 boxes of 80 and 3 boxes of 80.

Child 1 receives £160 and Child 2 receives £240.

Box A has 8 fish fingers costing £1.40.
Box B has 20 fish fingers costing £3.40.

Which box is the better value?

$$A = \frac{£1.40}{8} = £0.175$$

$$B = \frac{£3.40}{20} = £0.17$$

Therefore Box B is better value as each fish finger costs less.

There are boys and girls at a party in the ratio 5:2. There are 15 more boys than girls. Calculate the number of people at the party.

5 : 2

No. of extra Boxes (5-2) →

15 ÷ 3 = 5

7 × 5 = 35 people

Diagram showing boxes: 5 boxes of 5 and 2 boxes of 5.

If 20 apples weigh 600g. How much would 28 apples weigh?

$$600 \div 5 = 120\text{g} = \text{weight of 4}$$

$$7 \times 4 = 28 \text{ apples}$$

$$7 \times 120 = 840\text{g}$$

Key Concepts 5

Variables are **directly proportional** when the **ratio is constant** between the quantities.

Variables are **inversely proportional** when **one quantity increases in proportion to the other decreasing**.

Direct proportion:

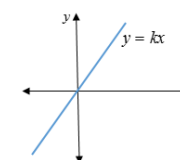
A	10	15	6	20
B	20	30	12	40

A:B = 1:2 for all values

Directly Proportional

$$y \propto x$$

$$y = kx \text{ for a constant } k$$



Homework Links

Homework Links

Sparx Maths

MathsGenie.co.uk /GCSE

Corbettmaths.com /contents

bbc.co.uk/bitesize /subjects

Key Vocabulary

Denominator

Numerator

Reciprocal

Recurring

Multiplier

Compound

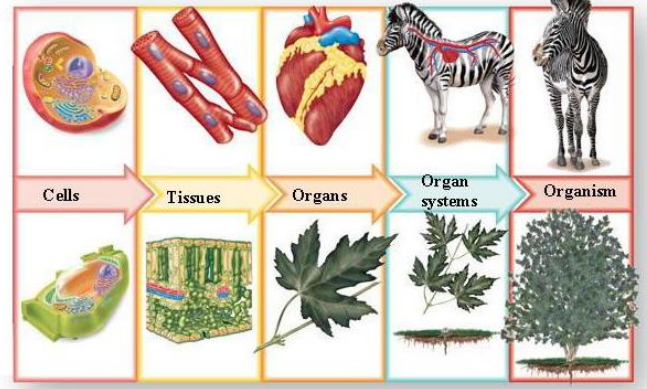
Proportion

Annual

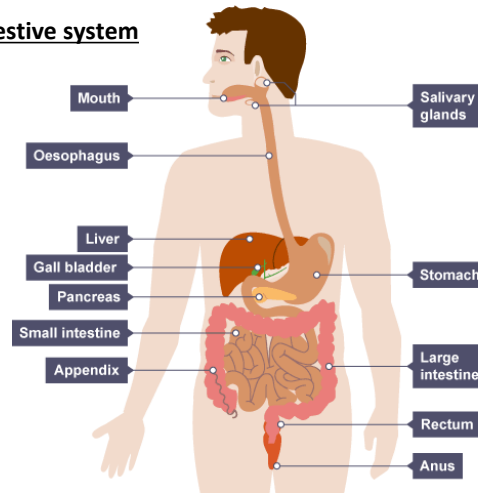
Biology 2: Organisation Knowledge Organiser

A) Organisation, Enzymes and Digestion

Levels of organisation



Digestive system

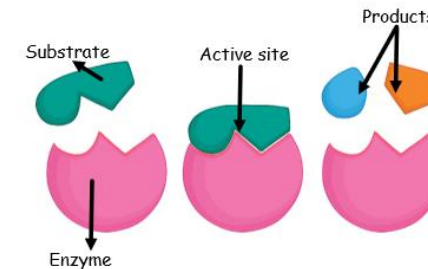


Key term/question	Definition/answer
1. Cells	Basic building blocks of all living organisms
2. Tissues	similar cells working together to perform a particular function
3. Organ	Different tissues working together to perform a particular function
4. Organ system	Different organs working together to perform a particular function
5. Organism	Different organ systems working together
6. Digestion	Large insoluble molecules are broken down into smaller soluble molecules
7. What is mechanical digestion?	Physical breakdown of food (e.g. teeth grinding, the stomach churning)
8. What is chemical digestion?	Chemical breakdown of food by enzymes
9. Function of salivary glands	Secretes the enzyme amylase
10. Three functions of the stomach (3)	<u>1.</u> Contraction of the muscular walls (mechanical digestion) <u>2.</u> Protease is secreted Hydrochloric acid is secreted
11. Functions of hydrochloric acid (2)	<u>1.</u> Lowers the pH of the stomach <u>2.</u> Kills harmful microorganisms
12. Function of the pancreas	Makes enzymes
13. Function of the liver	Makes bile
14. Function of the gall bladder	Stores bile
15. Functions of bile (2)	<u>1.</u> Neutralises the hydrochloric acid <u>2.</u> Emulsifies fats

Key term/question	Definition/answer
16. Function of the small intestine	Soluble food molecules are absorbed into the blood stream
17. Function of the large intestine	Absorbs water, leaving faeces
18. What are enzymes in the body?	Biological catalyst made of protein
19. Catalyst	Increases the speed of a reaction, without being changed or used up
20. Factors needed for optimum conditions for enzymes (2)	<u>1.</u> Temperature <u>2.</u> pH
21. Denatured	Enzyme loses its shape, so substrate won't fit into the active site.
22. Substrate	What the enzymes breaks down (e.g. starch, proteins and lipids)

Lock and key theory

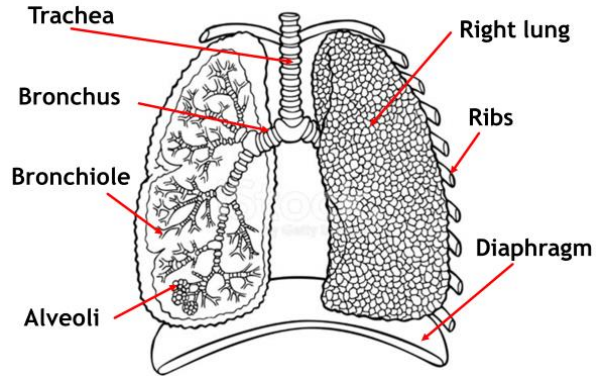
A model people use to explain how enzymes work is the lock and key theory. The enzyme is the 'lock' and the substrate is the 'key'. Substrates fit the enzymes active site, then react, turning into products.



Enzyme	Where enzyme is produced	Where enzyme is used	Function of enzyme
Carbohydrase / amylase	Salivary glands and pancreas	Mouth and small intestine	breaks down starch into glucose
Protease	Stomach, pancreas and small intestine	Stomach and small intestine	breaks down proteins into amino acids
Lipase	Pancreas and small intestine	Small intestine	breaks down lipids into glycerol and fatty acids

Biology 2: Organisation Knowledge Organiser

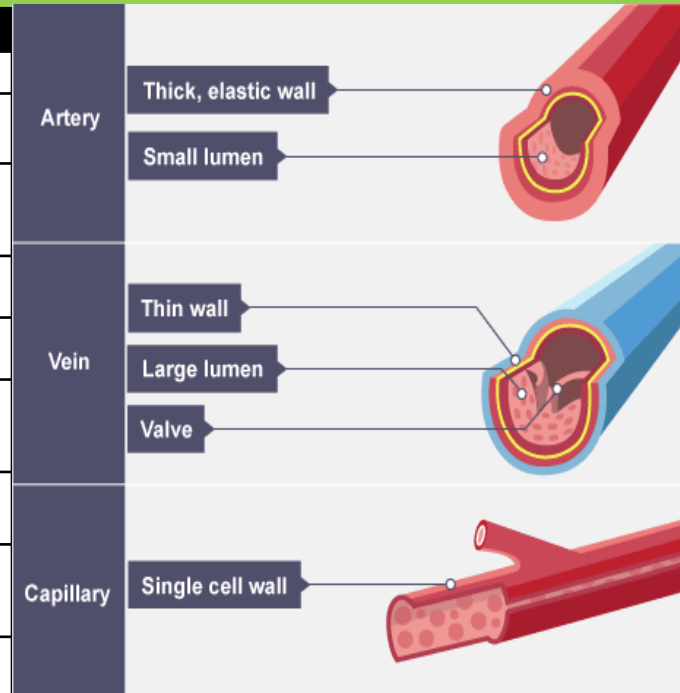
B) Respiratory System



Key term/question	Definition/answer
26. Components of blood (4)	<u>1.</u> Red blood cells <u>2.</u> White blood cells <u>3.</u> Plasma <u>4.</u> Platelets
27. Function of red blood cells	To transport oxygen to every cell of the body
28. Adaptations of red blood cells (3)	<u>1.</u> Biconcave shape to increase surface area <u>2.</u> contains haemoglobin which carries oxygen <u>3.</u> has no nucleus to give more space for carrying haemoglobin
29. Functions of white blood cells (3)	<u>1.</u> Engulf microorganisms and digests them <u>2.</u> Produce antibodies <u>3.</u> Produce antitoxins
30. Functions of plasma (4)	<u>1.</u> Carries the red blood cells, white blood cells and platelets <u>2.</u> Delivers nutrients to cells (e.g. glucose, amino acids) <u>3.</u> Transport carbon dioxide from organs to lungs <u>4.</u> Transports urea from the liver to the kidneys
31. Function of platelets	Helps blood to clot to seal a wound

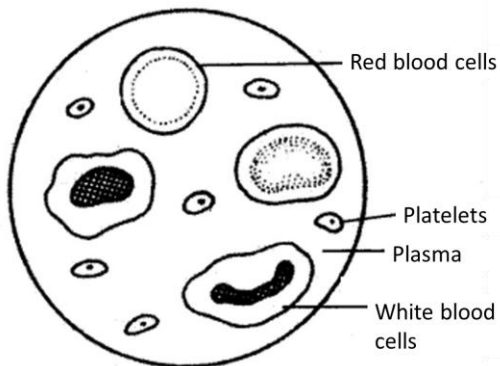
D) Circulatory System – Blood Vessels

Key term/question	Definition/answer
32. Blood vessels (3)	<u>1.</u> Arteries <u>2.</u> Capillaries <u>3.</u> Veins
33. Arteries	Blood vessel that carries blood away from the heart.
34. Artery structure (to withstand high blood pressure) (3)	<u>1.</u> Thick muscular walls <u>2.</u> Strong and elastic walls <u>3.</u> Small lumen
35. Examples of arteries of the heart (2)	<u>1.</u> Aorta <u>2.</u> Pulmonary artery
36. Capillaries	Blood vessel where exchange of materials at tissues take place.
37. Capillaries structure (to help with exchange of materials) (3)	<u>1.</u> One cell thick walls <u>2.</u> Permeable walls <u>3.</u> Very narrow to provide a large surface area
38. Veins	Blood vessel that carries blood back to the heart.
39. Veins structure (to carry blood at low pressure) (3)	<u>1.</u> Valves which prevent backflow of blood <u>2.</u> Thin walls <u>3.</u> Large lumen
40. Examples of veins of the heart (2)	<u>1.</u> Vena cava <u>2.</u> Pulmonary vein



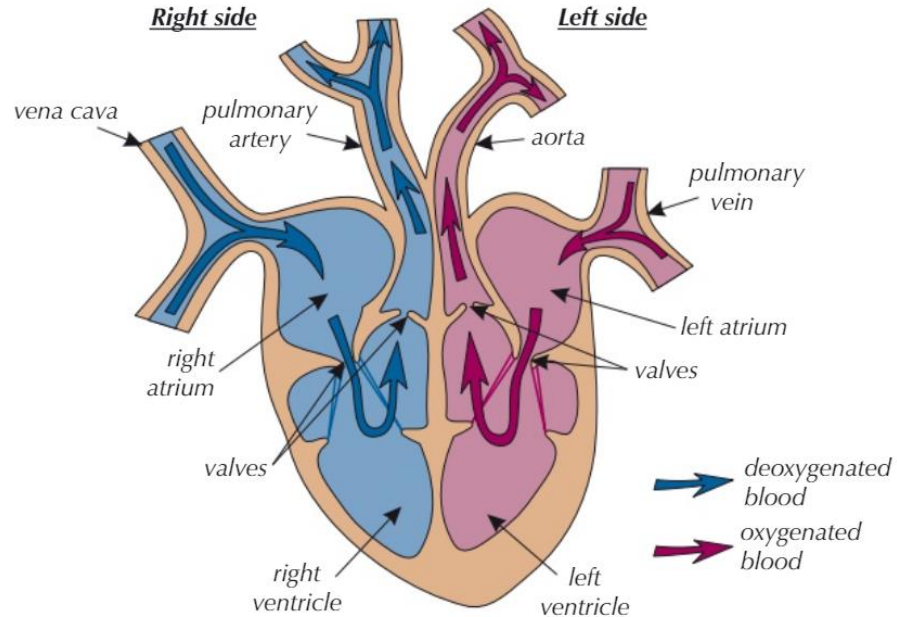
Key term/question	Definition/answer
23. Alveoli	Site of gas exchange in the lungs
24. How are alveoli adapted for efficient gas exchange? (4)	<u>1.</u> Have a large surface area <u>2.</u> Thin walls <u>3.</u> Moist lining <u>4.</u> Rich network of capillaries
25. Breaths per minute	Number of breaths ÷ number of minutes

C) Circulatory System – Components of the Blood



Biology 2: Organisation Knowledge Organiser

E) Circulatory System – The Heart



Key term/question	Definition/answer
47. Vein which returns blood to the heart from the lungs	Pulmonary vein
48. Artery which carries blood to the rest of the body	Aorta
49. Coronary arteries function	Provide the heart with oxygenated blood
50. Purpose of respiration	Releases energy
51. Word equation for respiration (aerobic)	glucose + oxygen → carbon dioxide + water
52. Symbol for glucose	C ₆ H ₁₂ O ₆
53. Double circulatory system (2)	<u>1.</u> Right ventricle pumps deoxygenated blood to the lungs to take in oxygen. Blood returns to the heart. <u>2.</u> Left ventricle pumps oxygenated blood to the other organs. Oxygen diffuses into the tissues and blood returns to the heart.
54. Heart's natural pacemaker location	Right atrium
55. What is the heart's natural pacemaker?	Group of cells which produce a small electrical impulse to regulate ventricle contraction
56. Rate of blood flow =	Volume of blood ÷ number of minutes
57. Cardiac output =	Heart rate x stroke volume

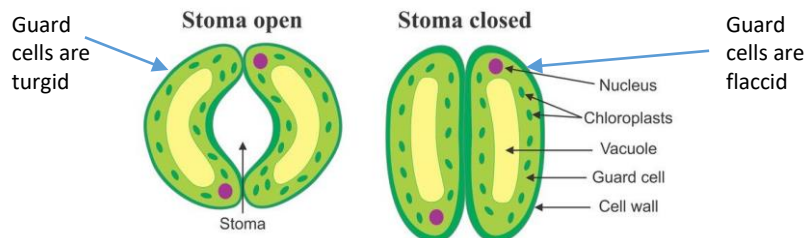
F) Health and Disease

Key term/question	Definition/answer
41. Circulatory system	Transports substances to and from cells and is made of blood, blood vessels and the heart
42. Oxygenated blood	Oxygen rich blood (oxygen present)
43. Deoxygenated blood	Oxygen poor blood (no oxygen)
44. The journey of oxygenated blood through the heart starting from the lungs	Lungs → pulmonary vein → left atrium → valve → left ventricle → valve → aorta → to all the organs (except the lungs) of the body → vena cava → right atrium → valve → right ventricle → valve → pulmonary artery → blood returns to the lungs
45. Vein which returns blood to heart	Vena cava
46. Artery which carries blood to the lungs	Pulmonary artery
Key term/question	Definition/answer
58. Health	A state of physical and mental well being
59. Communicable disease	Are diseases that can spread between individuals (e.g. HIV)
60. Non-communicable disease	Are disease that cannot spread between individuals (e.g. obesity)
61. Coronary heart disease	Caused by the build-up of fatty materials in the coronary arteries causing them to narrow.
62. Methods to treating coronary heart disease (3)	<u>1.</u> Using stents <u>2.</u> Using statins <u>3.</u> Artificial hearts
63. Risk factor	Factor linked to an increased likelihood of developing a certain disease.
64. Risk factors for coronary heart disease (5)	<u>1.</u> Smoking <u>2.</u> High-fat diet <u>3.</u> Lack of exercise <u>4.</u> Having high blood pressure <u>5.</u> Having high cholesterol
65. What is cancer?	Development of tumours cause by uncontrolled cell growth and division
66. Risk factors for cancer (4)	<u>1.</u> Smoking <u>2.</u> Obesity <u>3.</u> Frequent UV exposure <u>4.</u> Inheriting faulty genes

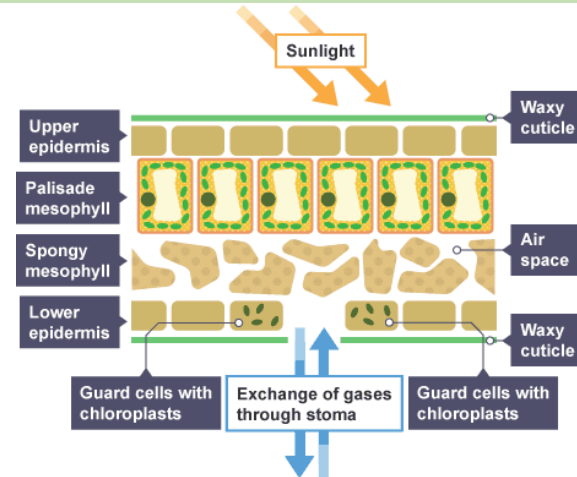
Biology 2: Organisation Knowledge Organiser

G) Plant Organisation

Key term/question	Definition/answer
67. What are two cells of plants?	Palisade cells and guard cells
68. Tissues of plants (6)	<u>1.</u> Epidermal tissue <u>2.</u> Palisade mesophyll <u>3.</u> Spongy mesophyll <u>4.</u> Xylem <u>5.</u> Phloem <u>6.</u> Meristem tissue
69. What are three organs of plants? (3)	<u>1.</u> Stems <u>2.</u> Roots <u>3.</u> Leaves
70. Function of epidermal tissue	Waxy cuticle to prevent water loss by evaporation
71. Function of upper epidermis tissue	Transparent so that light can pass through to the palisade layer
72. Function of palisade mesophyll tissue	Designed to perform photosynthesis
73. Function of spongy mesophyll tissue	Contains air spaces to allow gases to diffuse in and out of cells
74. Guard cells	Controls the opening and closing of the stomata
75. Stomata	Holes underneath the leaf which allow carbon dioxide to diffuse <u>in</u> and oxygen to diffuse <u>out</u>
76. Turgid	Water enters a plant cell and cell becomes swollen. The stomata open.
77. Flaccid	Plant cell loses water. The stomata close.
78. Function of phloem	Transports dissolved sugars, amino acids around the plant.
79. Function of xylem	Transports water and mineral up the plant
80. Translocation	Movement of nutrients from the leaves to other tissues within the phloem
81. Transpiration stream	The movement of water, from the roots, through the xylem and out of the leaves by evaporation
82. Factors affecting transpiration stream (4)	<u>1.</u> Light intensity <u>2.</u> Temperature <u>3.</u> Air flow <u>4.</u> Humidity

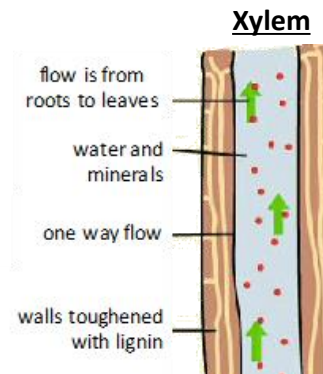


Leaf structure



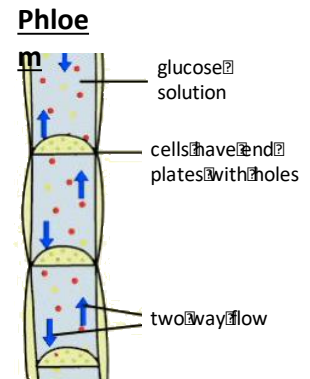
Transpiration in the xylem

Xylem tissue transports **water** and **mineral** ions from the **roots** to the **stems** and **leaves**. It is composed of **dead hollow tubes** strengthened by **lignin** and adapted for the transport of water in the transpiration stream.



Translocation in the phloem

Phloem tissue transports dissolved **sugars** and **amino acids** from the **leaves** to the **rest of the plant** for immediate **use** or **storage**. Phloem is composed of tubes made of **living elongated cells** with pores in the end walls.



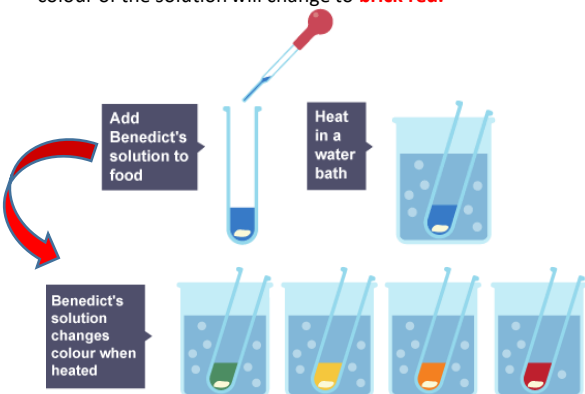
Biology 2: Required Practical 3 – Food Tests

A) Method for preparing a food sample

1. Use a **pestle** and **mortar** to break up a piece of food.
2. Transfer the ground up food to a **beaker** and add **distilled water**.
3. Stir the mixture with a **glass rod**.
4. Filter the solution using a **funnel** and **filter paper**.

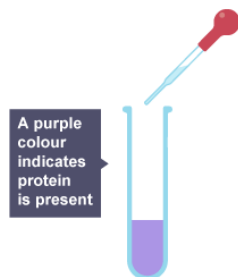
B) Method to test for sugars

1. Add the prepared food sample to a test tube and add 10 drops of Benedict's.
2. Heat in a water bath for 5 minutes at 80°C.
3. Observe colour change of mixture.
4. If there is a high concentration of reducing sugars present, the colour of the solution will change to **brick red**.



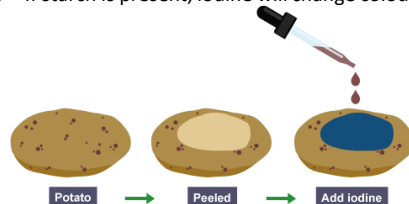
C) Method to test for proteins

1. Add the prepared food sample to a test tube and add 2cm³ of Biuret A solution.
2. Next add 2cm³ of Biuret B solution.
3. Shake the test tube gently to mix the contents.
4. Observe the colour change.
5. If protein is present, the colour of the solution will change to **purple**.



D) Method to test for Starch

1. Add a few drops of iodine to the food sample.
2. Observe the colour change.
3. If starch is present, iodine will change colour to **blue/black**.



E) Method to test for lipids using Sudan III

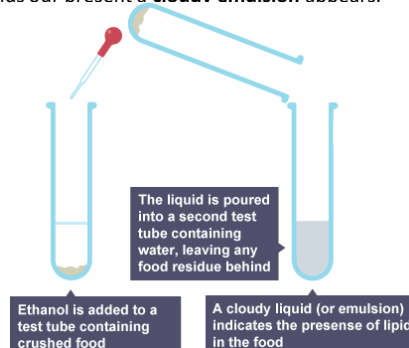
1. Add the prepared food sample to a test tube.
2. Add the same volume of distilled water and Sudan III to the test tube.
3. Shake the test tube gently to mix the contents.
4. Observe the colour change.
5. If lipids are present, the mixture will separate into two layers, and the top layer is stained **red**.

A red-stained layer forms on the surface of the water



F) Method to test for lipids using the emulsion test

1. Add the prepared food sample to a test tube.
2. Add a few drops of ethanol to the test tube.
3. Pour the mixture into a test tube containing distilled water.
4. If lipids are present a **cloudy emulsion** appears.



Key term/question	Definition/answer
1. Reagent to test for reducing sugars (glucose)	Benedict's solution
2. The colour change for a positive result of glucose	Blue → Green → Yellow → Brick red
3. Reagent to test for starch	Iodine
4. The colour change for a positive result for starch	Orange/brown → Blue/black
5. The reagent used to test for proteins	Biuret
6. The colour change for a positive result for protein	Blue → purple
7. Reagent used to test for lipids	Ethanol
8. The positive result for lipids	A cloudy emulsion appears
9. Why are food tests known as qualitative tests?	Results are not expressed as numerical data. They are expressed by the presence or absence of a substance by a colour change.

G) Risk Assessment

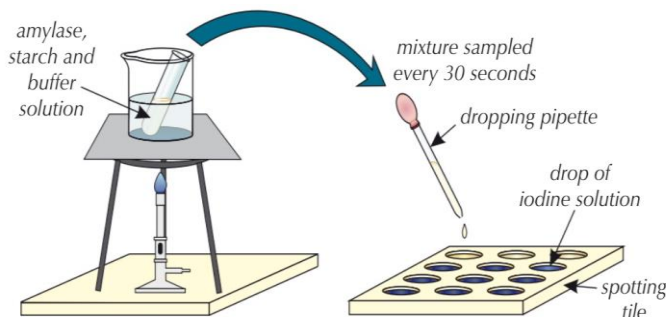
Hazard	Risk	Precaution
Biuret	Corrosive 	<ul style="list-style-type: none"> • Wear safety goggles • Use the lowest concentration • Avoid contact with skin and eyes
Benedict's and iodine	Irritant 	<ul style="list-style-type: none"> • Wear safety goggles • Use the lowest concentration • Avoid contact with skin and eyes
Ethanol	Flammable 	Do not use near a Bunsen Burner

Biology 2: Required Practical 4 – Investigating Enzyme Reactions

A) Method to investigate the effect of pH on amylase activity

1. Add one drop of **iodine** to each **spotting well**.
2. Place **2cm³** of **amylase**, **starch** and **pH 5 buffer** solution in three **different test tubes** and place in a water bath set at **35 °C** for 10 minutes.
3. Add all the contents of the test tubes together and start a **stopwatch**.
4. Use a **pipette** to transfer a drop of the solution to an iodine well **every 30 seconds** until the iodine remains **orange/brown**. When the iodine no longer changes colour starch is no longer present.
5. Record the time at which the **iodine no longer changes colour**.
6. Repeat steps 2 to 5 with **pH 6, pH7, pH8 and pH 9 buffer solutions**.

Practical set up



Key term/question	Definition/answer
1. Independent variable (what you change)	pH of the buffer solution
2. Dependent variable (what you measure)	Time taken in seconds for amylase to breakdown starch into glucose
3. Control variables of the amylase, pH buffer and starch solution (what you keep the same) (3)	<u>1.</u> The temperature (° C) <u>2.</u> Volume (cm ³) <u>3.</u> Concentration (g/dm ³)
4. Equipment used to control the temperature	Bunsen Burner or electric water bath
5. Equipment used to control the volume	Pipette
6. What does continuous sampling mean?	Results are recorded at time intervals
7. Optimal pH for amylase within the human body	7
8. What will happen to amylase below or above pH of 7?	Amylase will denature
9. Optimal temperature for enzyme activity within the human body	37 °C
10. Why is the experiment repeated two more times?	To identify any anomalies and to determine if the results are accurate .
11. Why is a pH buffer used?	To keep the pH of the solution the same
12. Why do you leave the amylase, starch and pH solution in the water bath for 10 minutes before adding the solutions together?	To ensure solutions reach the desired temperature before starting the investigation
13. How do you know that all the starch solution has been broken down?	The iodine will no longer change colour to blue/black but will remain orange/brown
14. Rate of reaction =	1000 ÷ time

B) Evaluating results

A student set up a model to represent the digestion and absorption of food molecules in the digestive system. The partially permeable tubing represents the small intestine and the water in the test tube represents the blood

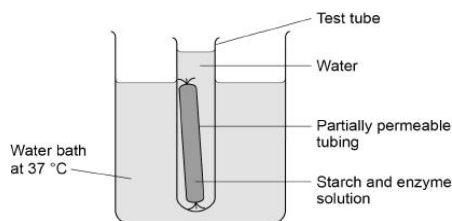











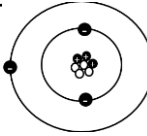
Table of results

Test	Description of liquid	Result of starch test	Results of sugar test
1	Mixture inside tubing at start	✓	X
2	Water in the test tube at start	X	X
3	Mixture inside tubing after 30 minutes	✓	✓
4	Water in the test tube after 30 minutes	X	✓

Test 1 Starch ✓ 	glucose X 	Test 2 Starch X 	glucose X 
Test 3 Starch ✓ 	glucose ✓ 	Test 4 Starch X 	glucose ✓ 

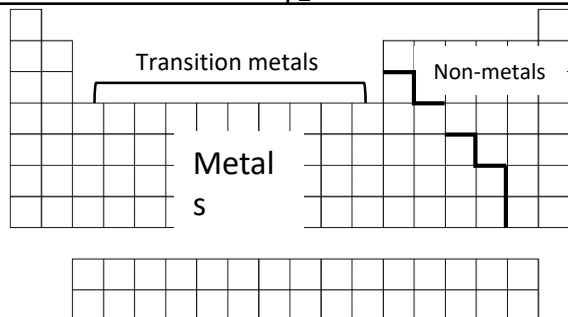
Chemistry 1: Atomic Structure and the Periodic Table Knowledge Organiser

D) The History of the atom

Key term/question	Definition/answer
32. The plum pudding model (2)	 <p>1. Atom is a sphere of a solid mass. 2. Sphere is positively charged with negative electrons embedded in it.</p>
33. Discovery of nuclear model (3)	 <p>1. Rutherford discovered that the centre of the atom is positively charged with a dense nucleus. 2. Chadwick discovered neutrons in the centre. 3. Bohr discovered the arrangement of electrons in shells.</p>

E) Periodic Table

Key term/question	Definition/answer
34. Number of elements in the periodic table	118
35. How did Mendeleev arrange the periodic table? (2)	1. Arranged elements according to proton number 2. Left gaps for undiscovered elements
36. Group number =	Number of electrons in outer shell
37. Period number =	Number of shells an element has
38. General properties of metals (4)	1. Strong 2. High melting and boiling points 3. Conductors of heat and electricity 4. High densities
39. General properties of non-metals (4)	1. Brittle 2. Lower melting and boiling points 3. Poor conductors 4. Lower densities



F) Group 1 elements

Key term/question	Definition/answer
40. Name of group 1 metals	Alkali metals
41. Alkali metals reactivity	Increases as you move down the group
42. Alkali metals melting and boiling point	Decreases as you move down the group
43. Ionic charge of alkali metals	1+ ion
44. Alkali metals reaction with water	Alkali metal + water → Metal hydroxide + hydrogen
45. Alkali metals reaction with oxygen	Alkali metal + oxygen → Metal oxide

G) Group 7 elements

Key term/question	Definition/answer
47. Name of group 7 elements	Halogen
48. Halogen reactivity	Decreases as you move down the group
49. Halogen melting and boiling point	Increases as you move down the group
50. Ionic charge of halogens	1- ion
51. Properties of fluorine	Poisonous yellow gas
52. Properties of chlorine	Poisonous green gas
53. Properties of bromine	Poisonous orange gas
54. Properties of iodine	Poisonous purple gas

H) Group 0 elements

Key term/question	Definition/answer
55. Name of group 0 elements	Noble gases
56. Why are noble gases unreactive?	Have a full outer shell
57. Group 0 boiling points	Increases as you move down the group

Chemistry 2 (C2): Bonding and Structure Knowledge Organiser

A) Ionic Bonding		B) Covalent Bonding	
Key term/question	Definition/answer	Key term/question	Definition/answer
1. Compound	Two or more different elements chemically bonded	19. What is covalent bonding?	Reaction between non-metals. Electrons are shared.
2. Three subatomic particles	Protons, neutrons and electrons	20. Molecule	Different atoms held together with covalent bonds. Not charged.
3. Proton mass, charge and location (3)	<u>1.</u> Mass = 1 <u>2.</u> Charge = +1 (positive) <u>3.</u> Location = nucleus	21. Examples of simple molecules	Hydrogen (H ₂), Chlorine (Cl ₂), Hydrogen chloride (HCl), Methane (CH ₄), Water (H ₂ O), Nitrogen (N ₂), Ammonia (NH ₃)
4. Neutron mass, charge and location (3)	<u>1.</u> Mass = 1 <u>2.</u> Charge = 0 (neutral) <u>3.</u> Location = nucleus	22. Why can't simple molecules conduct electricity?	No free electrons
5. Electron mass, charge and location (3)	<u>1.</u> Mass = 0 <u>2.</u> Charge = -1 (negative) <u>3.</u> Location = shells that orbit the nucleus	23. Why do simple molecules have low melting and boiling points? (2)	<u>1.</u> Weak intermolecular forces . <u>2.</u> Little energy needed overcome the forces.
6. What is an ion?	Atoms that have gained or lost electrons	<div style="display: flex; justify-content: space-between;"> <div> <p>Ammonia (NH₃)</p> <p>Dot and cross diagram</p> </div> <div> <p>Displayed formula</p> </div> <div> <p>3D models</p> </div> </div> <p>compounds with many repeating units. Short form of drawing</p>	
7. How do metals form ions?	Lose electrons	<p>polymers</p> <p>poly(ethene)</p> <p>where n is a large number.</p>	
8. How do non-metals form ions?	Gain electrons		
9. What ions do metals form?	Positive ions, called cations		
10. What ions do non-metals form?	Negative ions, called anions		
11. Group 1 metals ionic charge	1+ ion		
12. Group 2 metals ionic charge	2+ ion		
13. Group 6 non-metals ionic charge	2- ion		
14. Group 7 non-metals ionic charge	1- ion		
15. What is ionic bonding?	Metals react with non-metals. Metals give their electrons to non-metals to form a compound.		
16. What structure do ionic compounds form?	Giant ionic lattice		
17. Why do ionic compounds have high	<u>1.</u> Strong electrostatic force between ions. <u>2.</u> Lots of		

Ionic compound models

Dot and cross diagram	3D model	Ball and stick model
<p>Sodium Ion</p> <p>Na¹⁺</p> <p>Chlorine Ion</p> <p>Cl¹⁻</p>		<p>Key</p> <p>● Na⁺</p> <p>○ Cl⁻</p>

C) Covalent Bonding – Allotropes of Carbon – Diamond

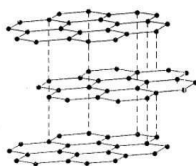
Key term/question	Definition/answer
25. Allotropes of carbon	Diamond, graphite, graphene and fullerenes
26. Number of bonds for each carbon atom in diamond	Each carbon bonds covalently to 4 carbon atoms
27. Properties of diamond (3)	<u>1.</u> Does not conduct electricity <u>2.</u> High melting and boiling points
Structure of diamond	<p>Carbon atom</p>

Chemistry 2 (C2): Bonding and Structure Knowledge Organiser

D) Covalent bonding – Allotropes of Carbon – Graphite

Key term/question	Definition/answer
28. Number of bonds for each carbon atom in graphite	Each carbon atom bonds covalently to 3 other carbon atoms
29. Properties of graphite (2)	1. Conduct electricity 2. High melting and boiling points 3. soft and slippery

Structure of graphite

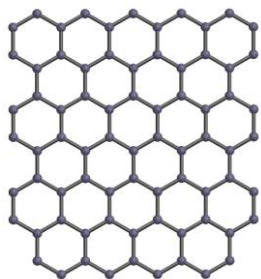


Graphite is arranged in **layers** with **weak intermolecular forces between layers**.

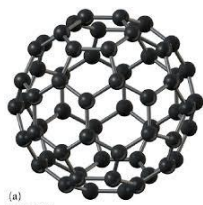
E) Covalent Bonding – Allotropes of Carbon – Graphene, Fullerene, Fullerene Nanotubes

Carbon allotrope	Structure	Properties	Uses
30. Graphene	A single layer of graphite.	Very strong. Has delocalised electrons so it is able to conduct electricity	Electronics
31. Fullerene (Buckminsterfullerene) (C ₆₀)	Hollow molecules of carbon, shaped in balls	Very strong. Hollow so can contain other chemicals within it	Drug delivery, catalysts, lubricants
31. Fullerene nanotubes	Tiny carbon cylinders	Very strong, light and flexible. Has delocalised electrons so it is able to conduct electricity.	Drug delivery, electronics, strengthening material

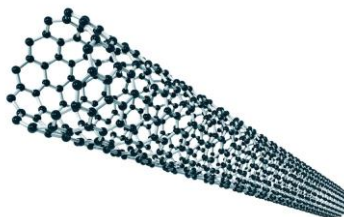
Structure of graphene



Structure of Buckminsterfullerene



Structure of fullerene nanotubes



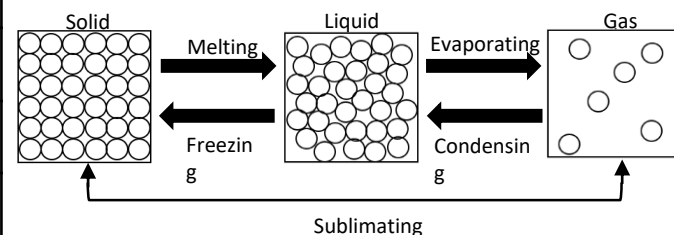
F) Metallic Bonding

Key term/question	Definition/answer
32. Why do metals have high melting points?	Strong electrostatic forces between the positive ions and delocalised electrons. Requires a large amount of energy to overcome.
33. Why are metals conductors?	Have delocalised electrons, which are free to move and flow
34. Why are metals malleable?	The layers are able to slide over each other so the metal can be bent and shaped.
35. Alloy	Mixture of two or more metals or a metal and another element.
36. Why are alloys harder than pure	layers are distorted by the presence of other elements. This

G) States of Matter

Key term/question	Definition/answer
37. What is meant by particle?	Any atom or molecule
38. States of matter (3)	1. Solid 2. Liquid 3. Gas
39. Particle arrangement in a solid (3)	1. Strong forces of attraction hold the particles close together. 2. Particles are in a fixed, regular arrangement . 3. Particles vibrate about their fixed positions
40. Particle arrangement in a liquid (3)	1. Weaker forces of attraction between particles. 2. Particles are close together but can slide past each other to form irregular arrangements . 3. Particles move in random directions at low speeds .
41. Particle arrangement in a gas (2)	1. Almost no forces of attraction between the particles. 2. Particles are free to move in random directions at high speeds .

State changes

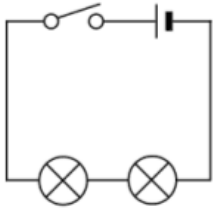
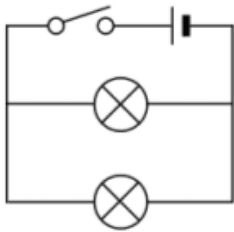


42. Solid symbol	XX _(s)
43. Liquid symbol	XX _(l)
44. Gas symbol	XX _(g)
45. Aqueous (in solution) symbol	XX _(aq)

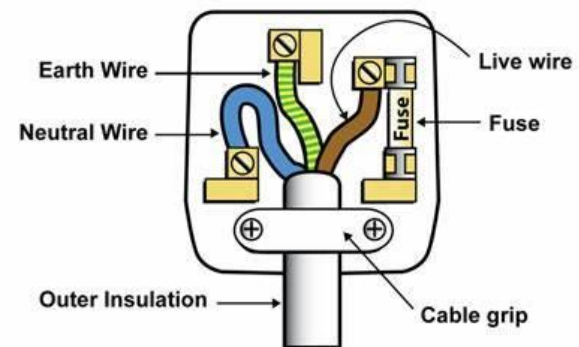
Physics 2 (P2): Electricity Knowledge Organiser

A) Circuit symbols		B) Equations and units of measure for electricity		D) Resistance and I-V Characteristics	
Key term/question	Definition/answer	Key term/question	Definition/answer	Key term/question	Definition/answer
1. Switch (open)		15. Formula linking current, charge flow and time	Charge = Current x Time $Q = It$	36. Resistance	Anything which reduces the flow of current
2. Switch (closed)		16. Formula linking potential difference, current and resistance	Potential difference = Current x Resistance $V = IR$	37. Example of an ohmic conductor (2)	1. Resistor 2. Wires
3. Cell		17. Formula linking power, current and potential difference	Power = Potential difference x Current $P = VI$	38. Relationship between current and resistance with an ohmic conductor	Directly Proportional
4. Battery		18. Formula linking power, current and resistance	Power = (Current x Current) x Resistance $P = I^2 R$	39. Diode	Ensures current flows in one direction
5. Resistor		19. Formula linking energy transferred, power and time	Energy transferred = Power x time $E = Pt$	40. Light emitting diode (LED)	Light is emitted when current flows through it
6. Variable resistor		20. Formula linking energy transferred, charge flow and potential difference?	Energy transferred = charge x potential difference $E = QV$	41. I-V characteristic	A graph of current against potential difference for a component
7. Fuse		21. Unit of charge	C = Coulombs	42. Sketch the V-I graph for an ohmic conductor (resistor)	
8. Voltmeter		22. Unit of current	A = Amperes (Coulombs per second)		
9. Ammeter		23. Unit of potential difference	V = Volts		
10. Filament lamp		24. Unit of resistance	Ω = Ohms		
11. Thermistor		25. Unit of energy	J = Joules	43. Sketch the V-I graph for a filament bulb	
12. Diode		26. Unit of power	W = Watts		
13. Light emitting diode (LED)		C) Current and potential difference		44. Sketch the V-I graph for a diode	
14. Light dependent resistor (LDR)		27. Subatomic particles (3)	1. Proton 2. Neutron 3. Electron		
		28. Particles with negative charge	Electrons		
		29. Particles with positive charge	Protons		
		30. 6.24×10^{18} electrons is...	One coulomb	45. Light dependent resistor (LDR) function	As light increases, resistance decreases
		31. Current	Flow of charge (coulombs) per second		
		32. Equipment to measure current	Ammeter (which is connect in series)	46. Thermistor function	As temperature increases, resistance decreases
		33. Potential difference (Voltage)	The amount of energy carried by each coulomb		
		34. Equipment to measure potential difference	Voltmeter (which is connected in parallel)		
		35. Source of potential difference in a circuit	Cell or battery		

Physics 2 (P2): Electricity Knowledge Organiser

E) Series circuits		G) Domestic electricity	
Key term/question	Definition/answer	Key term/question	Definition/answer
47. Series circuit		55. Direct current	Current flows in one direction
48. Rule for current in series?	Is the same	56. Alternating current	Current flows in both directions
49. Rule for potential difference in series?	Shared between components	57. UK mains electricity frequency	50 Hz
50. Rule for resistance in series?	Sum of the resistors	58. UK mains electricity potential difference	230 V
F) Parallel circuits		59. Three core cables in appliances	Live, neutral and earth wires
Key term/question	Definition/answer	60. Live wire	Brown – carries the alternating current from the supply
51. Parallel circuit		61. Neutral wire	Blue – completes the circuit and carries current away
52. Rule for current in parallel?	Splits up	62. Earth wire	Yellow and Green – safety wire – stops the appliance becoming live
53. Rule for potential difference in parallel?	Is the same	63. Why is the live wire dangerous?	Live wire potential difference = 230 V. If touched will complete the circuit and current will flow through you, resulting in injury or death
54. Rule for resistance in parallel?	Is less than the lowest resistor	64. What is the National Grid?	A system of cables and transformers linking power stations to consumers
		65. What do step-up transformers do?	Increase the Potential difference (which lowers the current)
		66. What do step-down transformers do?	Decrease the Potential difference for use by consumers
		67. Why is the National Grid an efficient way of transferring energy?	Energy lost due to heating is minimised as high potential difference equals lower current

Wires of a plug



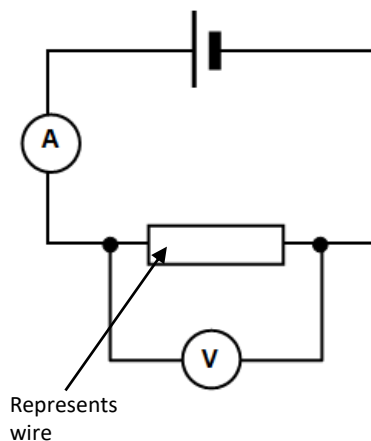
Physic 2: Required practical 15 – Investigating how the length of a wire affects resistance

Key term/question	Definition/answer
1. Independent variable	Length of wire
2. Dependent variable	Resistance
3. Control variable	<u>1.</u> Type of metal <u>2.</u> Diameter of wire <u>3.</u> Temperature
4. Formula linking potential difference, current and resistance	Potential difference = Current x Resistance $V = IR$
5. Relationship between length of wire and resistance	Directly proportional
6. Why does resistance increase as the length of wire increase?	Electrons collide with metal ions more frequently
7. How do we control the temperature?	<u>1.</u> Switch the power pack off between readings <u>2.</u> Use a low potential difference
8. Why do we not use a wire shorter than 10cm?	To prevent the wire from becoming too hot

Method for measuring resistance of a wire

1. Ruler with a wire and ammeter is attached in series.
2. Attach the voltmeter in parallel to the wire.
3. Attach two crocodile clips 100 cm apart on the wire.
4. Turn on the powerpack at 4 V and measure the current and the potential difference.
5. Reduce the length of the wire by 10 cm and measure the current and potential difference again.
6. Repeat step 5 until reaching the length of 10 cm.
7. For each length of wire use the equation **resistance = potential difference ÷ current**

Circuit set up for measuring resistance of a wire



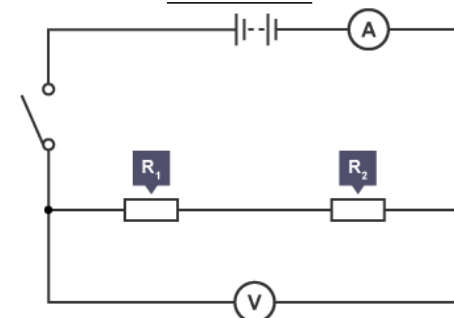
Physic 2: Required practical 15 – Resistance in series and parallel circuits

Key term/question	Definition/answer
9. Independent variable	Number of resistors
10. Dependent variable	Resistance
11. Control variable	Identical resistors
12. Rule for resistance in series?	Sum of the resistors
13. Rule for resistance in parallel?	Is less than the lowest resistor

Method for measuring resistance in series

1. Attach resistor and an ammeter in series.
2. Attach the voltmeter in parallel to the resistor.
3. Turn on the powerpack at 4 V and measure the current and the potential difference.
4. Add another identical resistor in series and measure current and potential difference again.
5. Repeat step 5 until you've added all the resistors.
6. For each resistor use the equation **resistance = potential difference ÷ current**

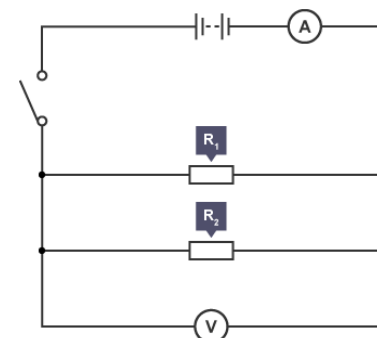
Circuit set up for measuring resistance in series circuits



Method for measuring resistance in parallel

1. Attach resistor and an ammeter in series.
2. Attach the voltmeter in parallel to the resistor.
3. Turn on the powerpack at 4 V and measure the current and the potential difference.
4. Add another identical resistor in parallel with the first resistor and measure current and potential difference again.
5. Repeat step 5 until you've added all the resistors.
6. For each resistor use the equation **resistance = potential difference ÷ current**

Circuit set up for measuring resistance in parallel circuits



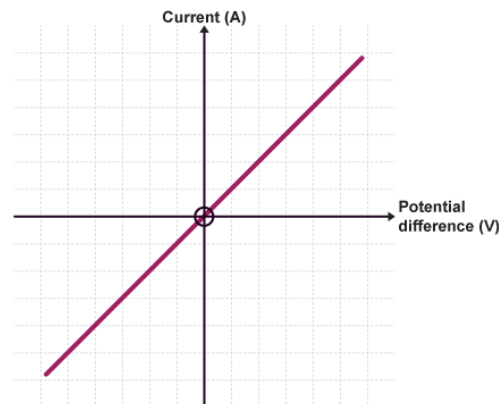
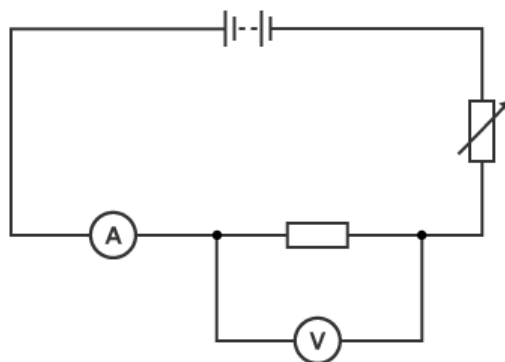
Physic 2: Required practical 16 – Investigating I-V characteristics

Method for measuring I-V characteristics

1. Connect the component to be tested, variable resistor and ammeter in series.
2. Connect the voltmeter in parallel across the component to be tested.
3. Alter the variable resistor and record the potential difference and current.
4. Continue to adjust the variable resistor to record several readings.
5. Reverse the wires to the battery to reverse the direction of potential difference.
6. The voltmeter and the ammeter will now both have negative values.
7. Continue to adjust the variable resistor to record several readings.
8. To calculate the resistance, use the equation **resistance = potential difference ÷ current**

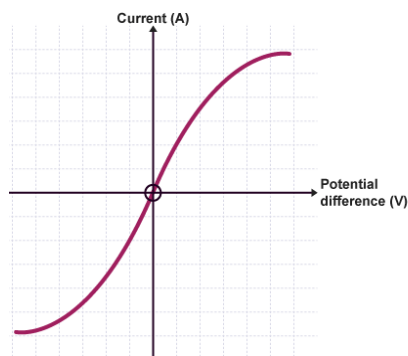
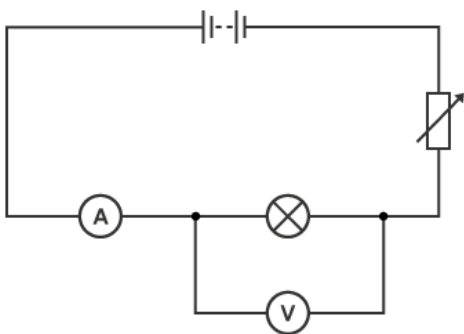
I-V Characteristics of a resistor at constant temperature

The current through a resistor at a constant temperature is directly proportional to potential difference.



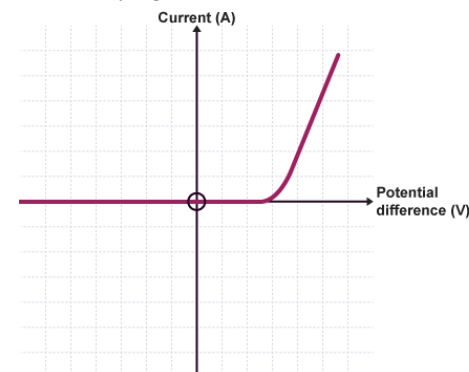
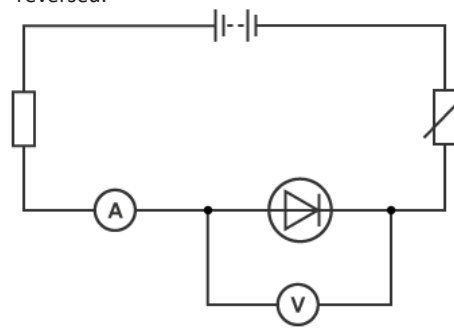
I-V Characteristics of a filament lamp

When an electrical charge flows through a filament lamp, it transfers some energy to the thermal energy store of the filament, which heats up and glows. Resistance increases with temperature, so as more current flows through the lamp, the lamp heats up more and the resistance increases. This means less current can flow per unit of potential difference, so the graph becomes shallower.



I-V Characteristics of a diode

A diode only lets current pass through it in one direction. The resistance of a diode depends on the direction of the current. If the potential difference is arranged to try and push the current the wrong way no current will flow as the diode's resistance remains very large. Therefore, a diode will only let current flow through in one direction but will have a very high resistance if the current is reversed.



Topic: Medicine on the Western Front

BIG QUESTIONS

How did Medicine advance during WW1?

What was the Western Front and what was the medical context at the start of WW1?

What were trenches like during WW1?

What were the key battles of WW1 and what happened in them?

What conditions required treatment and what issues were there with transport?

What was the role of the RAMC in WW1?

What role did the FANY play during WW1?

How significant was experimentation on the Western Front for medical developments during WW1?

Key Vocabulary

Barbed wire - Metal wire with sharp points used in no-man's-land to protect from enemy attack. It made it difficult for men to get through without being trapped by the wire.

Blighty wound - A wound serious enough to get a soldier away from the fighting and back to Britain.

Brodie helmet - Steel helmet held with a strap. Introduced in 1915, it reduced fatal head wounds by 80%.

Chlorine gas - Causes burning pain in throat and eyes and can lead to death by suffocation. First used by Germans in the second battle of Ypres, 1915.

First Aid Nursing Yeomanry (FANY) - A women's voluntary organisation which provided medical services on the frontlines such as driving ambulances and emergency first aid.

Machine guns - Guns that could fire 450 rounds a minute; their bullets could fracture bones or pierce organs.

Mustard gas - Odourless gas which passes through clothing to burn the skin, causing internal and external blisters. Gas masks offer little protection against mustard gas, as it goes through clothing. First used by the Germans in 1917.

No-man's-land - The area between two opposing lines of trenches.

Phosgene gas - Similar to chlorine gas but faster acting and can kill exposed person within 2 days. First used end of 1915.

Royal Army Medical Corps (RAMC) - The branch of the army responsible for medical care.

Salient - An area of a battlefield that is surrounded by enemy territory on 3 sides.

Trench system - A complex network of trenches in which men could live and fight. Trenches were dug to a depth of about 2.5m in a zig-zag pattern to confuse the enemy. Trenches were built over a distance of 400 miles all the way from the northern French coast to Switzerland.

Shrapnel - Fragments of metal from exploded shells.

Chain of Evacuation

Regimental Aid Post (RAP) - Located within 200m of the front line, in deserted buildings or communication trenches. Manned by a medical officer and stretcher bearers with first-aid knowledge. Its purpose was to give immediate first aid and to get as many men back to the fighting as possible. It could not deal with serious injuries.

Dressing station - Located in abandoned buildings or dugouts about half a mile from the front line. Staffed by medical officers, stretcher bearers and nurses. Injured men would walk to the dressing station or be carried there by stretcher bearers.

Casualty Clearing Stations (CCS) - Located far enough from the frontline to provide safety against attack but close enough to be accessible to ambulance wagons. Medical officers would operate on critical injuries at the CCS. When arriving, wounded soldiers were divided into 3 groups (triage) to help medical staff make decisions about their treatment:

Base hospitals - These hospitals were located near the French or Belgian coast so that the wounded could be easily transported back to Britain. As the war progressed, soldiers' wounds were increasingly dealt with at Casualty Clearing Stations and not at base hospitals because wounds had to be dealt with quickly before gangrene set in.

Key Dates

June 1914 - Assassination of Archduke Franz Ferdinand - Trigger for the war

4 August 1914 - Britain declares war on Germany

Oct-Nov 1914 - First battle of Ypres. British casualties were over 50,000 but kept control of Channel ports.

Apr-May 1915 - Second battle of Ypres - Germans move 2 miles closer to town of Ypres; first use of chlorine gas; British losses of 59,000.

July 1916 - Battle of the Somme. The Allies advance 5 miles using artillery bombardment to break through enemy lines. This leads to much higher casualties (400,000 men).

6 April 1917 - America enters the war. Blow to German morale and a decisive turning point in the war.

Apr-May 1917 - Battle of Arras

British advance 8 miles; 160,000 casualties.

Oct 1917 - Battle of Cambrai - First large scale use of tanks.

July 1918 - Hundred days offensive - Allies launch a series of sustained attacks against the Germans which leads to Germany's surrender.

Key Treatments/Developments in Surgery

X-rays - A type of electromagnetic radiation that can provide imaging of the inside of the body. Discovered by accident in 1895 by Wilhelm Roentgen, a German physicist. X-rays were used in the war to identify shrapnel and bullets in wounds.

Blood Transfusions - Blood taken from a healthy person and given to another person. Developed as follows: Almroth Wright, a British scientist, prevents blood from clotting in 1894 by using a solution of acids.

Discovery of blood groups in 1901 by Karl Landsteiner followed by the identification of type "O" blood by Reuben Ottenberg in 1907 as the universal blood group. In 1916, Francis Rous and James Turner develop a method for storing blood for up to 4 weeks by adding a citrate glucose solution to it. Stored blood was used to treat injured at the battle of Cambrai in 1917.

Brain surgery - 20% of all wounds on the Western Front were to the head, face and neck. These were often fatal.

Harvey Cushing, an American neurosurgeon, developed new techniques in brain surgery using a magnet to remove metal fragments from the brain.

He also operated using local rather than general anaesthetic, to reduce the risk of swelling in the brain.

Plastic surgery - Developed by a New Zealand doctor called Harold Gillies who was sent to the Western Front in January 1915. Gillies saw many head injuries that caused severe disfigurement and became interested in facial reconstruction.

Plastic surgery was carried out in Britain, mainly at the Queen's Hospital in Sidcup. By the end of the war, nearly 12,000 plastic surgery operations had been carried out there.

Thomas Splint

Created in the late 19th century by Robert Jones and his uncle Hugh Thomas in their medical practice, this splint was designed to stop joints from moving. The introduction of the Thomas splint to the Western Front in December 1915 helped increase survival rates for compound leg fractures from 20% to 82%.

Treatment of wounds to prevent infection

Wound excision or debridement: The cutting away of dead, damaged or infected tissue from a wound to stop infection spreading. After excision, the wound would be closed by stitching. Carrel-Dakin Method: A method for treating wounds with a sterilised salt solution through a tube.

Aseptic surgery

Surgery performed under sterilised conditions to prevent infection from germs. By the start of the 20th century, aseptic surgery was achieved by: medical staff washing hands and face before operations, wearing rubber gloves and gowns
sterilising air by pumping it through a heating system and sterilising instruments using an autoclave

Key Medical Conditions

Gangrene

A condition where a loss of blood supply causes body tissue to die. Gangrene can occur as a result of an injury and typically starts in toes, feet, fingers and hands. Treated by surgical removal (or amputation) of the affected area. Gas gangrene is an infection that produces gas in the gangrenous wound. The bacteria for gas gangrene spread from the soil on the Western Front, which had been heavily farmed with fertiliser before the war.

Shellshock

A condition that was little understood at the time of the war. Soldiers experienced headaches, nightmares, loss of speech, shaking and complete mental breakdown. Many men were treated for shellshock at the Craiglockhart hospital in Edinburgh.

Shrapnel wounds

When shells exploded, shrapnel (metal fragments from the shells) travelled at fast speeds over wide areas, causing injuries to anyone in their way.

Trench fever

Flu-like condition spread by lice in the trenches. Delousing stations developed to try to prevent.

Trench foot

Painful swelling of the feet caused by standing in cold mud and water, which could lead to gangrene. Prevention included keeping feet dry and using whale oil. Foot inspections became part of trench life.

Homework Links

<https://www.youtube.com/watch?v=oore7jT-lDc>

An episode from 'The Great War' series on YouTube that explains why survival rates for wounded soldiers improved so much from the beginning to the end of the war

GCSEPod also has some excellent videos on this topic:

<https://members.gcsepod.com/shared/playlists/playlist/1637394>

Homework:

Week 2 –_Revise for the week 3 Assessment.

Week 5/6 -

1. Describe two features of blood transfusions during WW1 (4 marks)

Extension. How useful are sources A and B for an enquiry into the treatment of battle injuries by medical staff on the Western Front? Explain your answer using both sources and your knowledge of the medical context

Sources for use with Section A.

Source A: A photograph showing a British casualty clearing station on the Western Front, c1916.



Source B: From *A Nurse at the Front, The First World War Diaries of Sister Edith Appleton* by Edith Appleton. Edith's handwritten diaries were kept by her family until they were published in 2012. She was a trained nurse, working at a military base hospital in northern France. Here Edith is describing the arrival of wounded soldiers at the hospital during the early days of the Battle of the Somme, 1916.

July 4

Wounded! Hundreds upon hundreds, some on stretchers, some being carried, and some walking – and all covered from head to foot in mud. We had to deal with large numbers of horribly bad wounds. Some were crawling with maggots while others were stinking and full of gangrene. One poor lad had been shot in both eyes. Three men had died on the way to the hospital and two died before they could be treated.

July 8

The surgeons are amputating limbs and boring holes into skulls at the rate of 30 a day.

July 13

I fear one boy may not get better. He has pneumonia caused by a lump of metal in his left lung and I suppose they will not be able to operate on him.

BIG QUESTIONS

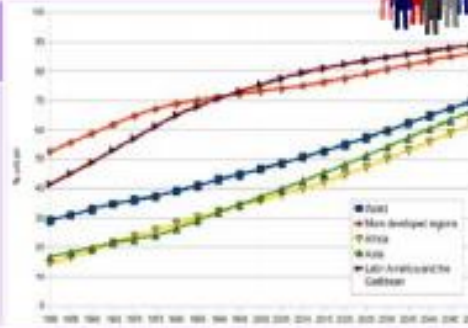
1. How is London important both nationally and internationally?
2. Who is living in London and why?
3. How have jobs changed in London?
4. What is the best way to travel around London?
5. How green is London?
6. What is social deprivation and why it is an issue in London?
7. How did the Olympics change London?
8. Can cities ever be sustainable?

What is urbanisation?

Urbanisation is the increase in the amount of people living in urban areas such as towns or cities. In 2007 the UN announced that, for the first time, more than 50 % of the world's population live in urban areas.

Where is Urbanisation happening?

Urbanisation is happening all over the world but in LICs and NEEs rates are much faster than HICs. This is mostly because of the rapid economic growth, which is leading to increasing life expectancies, that they are experiencing.



Types of Cities

Megacity

An urban area with over 10 million people living there.



More than two thirds of current megacities are located in either NEEs or LICs. The majority of megacities are located in Asia. The number of megacities are predicted to increase from 28 to 41 by 2030.

Causes of Urbanisation

Rural - urban migration

The movement of people from rural to urban areas.



Push factors

Factors that encourage people to move **away** from a place.

- Natural disasters e.g. drought.
- War and Conflict.
- Mechanisation.
- Lack of opportunities.
- Lack of employment.

Pull factors

Factors that encourage to move people **to** a place.

- Factors are sometimes perceived.
- More Jobs .
- Better education & healthcare.
- Increased quality of life.
- Following family members.

Natural Increase

When the birth rate is greater than the death rate.

Increase in birth rate (BR)

- Migration often involves young adults. When there is a high percentage of population of child-bearing age this leads to higher birth rate.
- In the UK migrant groups have higher fertility rates.
- Lack of contraception or education about family planning.

Lower death rate (DR)

- A higher life expectancy is due to supplies of clean water, better living conditions and diet.
- Improved medical facilities help lower infant mortality rates and raise life expectancies.

Distribution of population & cities in the UK



The location of most UK cities is linked to the availability of natural resources (particularly coal), or near to the coast for imports, and the subsequent location of industry during the industrial revolution. This is because coal was the original source of power for the factories e.g. Glasgow, Newcastle, Nottingham and Cardiff.

London is a major anomaly to this trend. Instead its location on the River Thames enabled resources to be imported along the River Thames. Imports from across the British Empire were then used in industry.

Homework

[Watch the power point and take the quiz on this website.](#)

[Urban case study - London | Geography Education Online](#)

Sustainable urban living

Sustainable urban living means being able to live in cities in ways that do not pollute the environment and using resources in ways that ensure future generations can also use them. Sustainable living should ensure that all facilities necessary for people are available, and that areas are economically viable.



Water Conservation

This is about reducing the amount of water used.

- Rainwater harvesting provides water for gardens and for flushing toilets.
- Installing water meters discourages water use. Dual flushes on toilets flush less water.
- Educating people on using less water.



Creating Green Space

Creating green spaces in urban areas can improve places for people who want to live there.

- Provide natural cooler areas for people to relax in.
- Encourages people to exercise.
- Reduces the risk of flooding from surface runoff.
- Reduces airborne particulates.

Energy Conservation



Using less fossil fuels can reduce the rate of climate change.

- Promoting renewable energy sources e.g. solar panels, insulation.
- Making homes and appliances more energy efficient.
- Encouraging people to use less energy.
- Using wood in buildings instead of bricks.



Waste Recycling

More recycling means fewer resources are used. Less waste reduces the amount that eventually goes to landfill. This reduces waste gases (methane) and contamination of water sources.

- Collection of household waste.
- More local recycling facilities.
- Greater awareness of the benefits in recycling.

Traffic management



Urban areas are busy places with many people travelling by different modes of transport. This has caused urban areas to experience traffic congestion that can lead to various problems.

Environmental problems

- Traffic increases air pollution which releases greenhouse gases that is leading to climate change.
- More roads have to be built.



Economic problems

- Congestion can make people late for work.
- Business deliveries take longer. This costs companies more money as drivers take longer to make the delivery.

Social Problems

- There is a greater risk of accidents. This is a particular problem in built up areas.
- Congestion causes frustration.
- Traffic creates particulates that can affect health e.g. asthma.

Congestion solutions

- Widen roads to allow more traffic to flow more easily and avoid congestion.
- Build ring roads and bypasses to keep traffic out of city centres.
- Introduce park and ride schemes to reduce car use.
- Encourage car-sharing schemes in work places and by allowing shared cars in special lanes.
- Have public transport, cycle lanes & bike hire schemes.
- Having congestion charges discourages drivers from entering the busy city centres.



Traffic management in London: congestion charges

Introduced in 2003, drivers are charged £11.50 a day if they drive in the central zone of the city. There has been a 10% reduction in the number of cars driving in this zone since it was introduced.

Greenbelt Area



This is a zone of land surrounding a city where new building is strictly controlled to try to prevent cities growing too much and too fast. Some developments are now being allowed on green belt. This is controversial.

Urban Regeneration



The investment in the revival of old, urban areas by either improving what is there or clearing it away and rebuilding e.g. development of New Islington on the Cardroom Estate, or the conversion of old factories into accommodation.

Key Vocabulary

Brownfield site – land once used for industry that is now redundant.

Dereliction – the state of having been abandoned and dilapidated.

Economic – factors to do with money.

Gentrification – the character of a poor urban area is changed by wealthier people and investment. This improves housing and attracts new businesses, but can also displace current inhabitants.

Greenfield site – land not previously built on before.

Inequalities – a lack of equality in an area.

Integrated transport systems – a system where different types of transport are linked together.

Investment – an action of giving a sum of money for a profitable return.

Mega-cities – a very large city, with typically over 10 million people.

Migration – the movement of people from one place to another. Usually to find work or better living conditions.

Natural increase – where birth rate is higher than death rate in an area.

Pollution – the presence or introduction of a harmful substance into the environment.

Rejuvenation – the action of improving something, making it fresher and modern.

Rural-urban fringe – the belt of land between a built up area (of city or town) and countryside.

Social deprivation – a state of poorer housing conditions and infrastructure.

Social opportunities – the opportunities available to people.

Sustainable urban living – people living a good quality of life today, whilst being mindful in their actions for the quality of life for future generations.

Traffic congestion – vehicles queuing resulting in longer trips and increased pollution levels.

Urban greening – practice to design parks and other green areas into a built up area.

Urbanisation – the process of making an area more urban.

Urban regeneration – planning to repair the social and economic problems of an urban area.

Urban sprawl – the spreading of urban developments.

BIG QUESTIONS

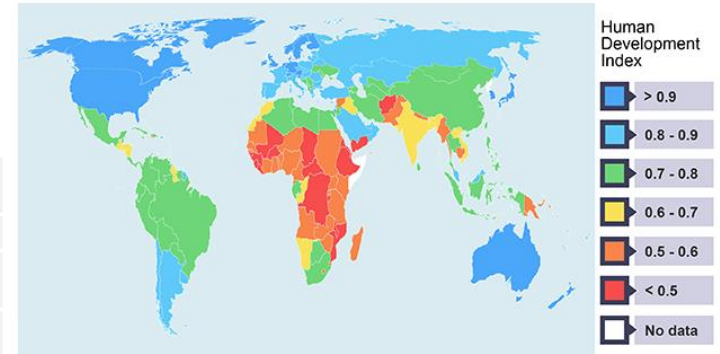
1. How do we decide how developed a country is?
2. What are developmental indicators and how useful are they?
3. What is the demographic transition model (DTM) and how is it linked to economic development of a country?
4. How do historical, natural and political factors affect how developed countries are?
5. How and why do countries develop at different speeds?
6. What are the consequences of uneven development?
7. How can we reduce the development gap?
8. What is intermediate technology and how can it help to reduce the development gap?
9. What is fair trade and how can it help to reduce the development gap?
10. What is debt relief and how can it reduce the development gap?
11. How can tourism reduce the development gap?

The level of **development** of a country shows how **economically, socially, culturally or technologically advanced** that country is. The way in which countries are classified is changing. Development is measured using the **Human Development Index (HDI)**. HDI is calculated by the **United Nations**. It measures average **life expectancy**, level of education and income for each country in the world. Each country is given a score between 0 and 1 - the closer a country gets to 1, the more developed it is.

Other measures of development

HDI is the best measure of development as it takes into account both economic and social factors. However there are many other measures of development that can be used. Some of them are:

Measure of development	Description
Access to safe water	The percentage of people who have access to safe, clean water.
Birth rate	The number of live births per 1,000 people. Birth rates are often high in a less developed country.
Death rate	The number of deaths per 1,000 people. High death rates can indicate a less developed country.
GNI per capita	Gross national income per person. The value of a country's income, divided by the number of people in that country.
Infant mortality rate	The number of babies who don't survive to the age of 1 per 1,000 live births.
Life expectancy	The average age that a person may live to.
Literacy rate	The percentage of adults who can read and write.
People per doctor	A ratio to show the number of people per doctor. A lower ratio can indicate a richer country.



The variation of HDI across the world in 2019.

HDI – this is widely recognised as a good measure of development. It takes into account economic measures, such as income, but also social measures, such as levels of education

Advantages and limitations of using one method of development

Using just one measure of development can be misleading, and it is often better to use more than one.

[What is the Demographic Transition Model? - Internet Geography](#)

Stage 1 Birth rate and death rate are high – low natural increase – low total population

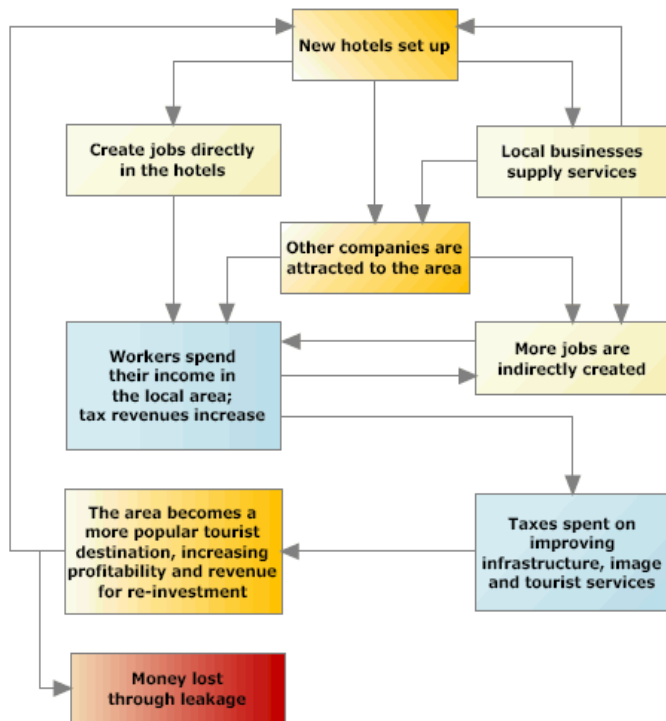
Stage 2 Birth rate is high – death rate is falling – high natural increase (population growth)

Stage 3 Falling birth rate – low death rate – high natural increase (population growth)

Stage 4 Birth rate and death rate is low – low natural increase – high total population

The Demographic Transition Model does not take into account migration.

The Tourist Multiplier Effect



Measures to reduce the development gap

There are lots of ways that can help to reduce the development gap.

Investment	Large companies can locate part of their business in other countries. This helps a country to develop as the companies build factories, lay roads and install internet cables.
Aid	Aid is when one or more countries give money to other countries. The money has to be spent on things that will benefit the population.
Using intermediate technology	Intermediate technology is using equipment and techniques that are suitable for their country of use. Many poorer countries do not have the skills to maintain expensive equipment. Small-scale, basic solutions are usually more appropriate.
Fairtrade	Fairtrade is paying producers a reasonable price for the goods that they produce. Many farmers in LICs are paid very low wages. This means that they cannot escape poverty. Fairtrade gives farmers a better chance in life.
Debt relief	Many LICs owe money to other countries. Often the repayments and interest are so expensive that indebted countries have no money left to spend on development projects. Debt relief is when debts are either reorganised to make them more manageable, or reduced.
Microfinance loans	Microfinance loans are when money is lent to LICs to help them to develop. These are often small loans with reasonable interest rates. They are available to people and businesses who may normally struggle to get credit.

Keyword terminology

Birth rate The number of births in a year per 1000 of the total population.

Death rate The number of deaths in a year per 1000 of the total population.

Demographic Transition Model A model showing how populations should change over time in terms of their birth rates, death rates and total population size.

Development The progress of a country in terms of economic growth, the use of technology and human welfare.

Development gap The difference in standards of living and wellbeing between the world's richest and poorest countries (between HICs and LICs).

Fairtrade When producers in LICs are given a better price for the goods they produce. Often this is from farm products like cocoa, coffee or cotton. The better price improves income and reduces exploitation.

Gross national income (GNI) A measurement of economic activity that is calculated by dividing the gross (total) national income by the size of the population. GNI takes into account not just the value of goods and services, but also the income earned from investments overseas.

Human Development Index (HDI) A method of measuring development in which GDP per capita, life expectancy and adult literacy are combined to give an overview. This combined measure of development uses economic and social indicators to produce an index figure that allows comparison between countries.

Intermediate technology The simple, easily learned and maintained technology used in a range of economic activities serving local needs in LICs.

International aid Money, goods and services given by the government of one country or a multilateral institution such as the World Bank or International Monetary Fund to help the quality of life and economy of another country. Life expectancy The average number of years a person might be expected to live.

Literacy rate The percentage of people who have basic reading and writing skills.

Microfinance loans Very small loans which are given to people in the LICs to help them start a small business.

Trade The buying and selling of goods and services between countries.

Homework: How tourism can reduce the development gap - Maldives case study

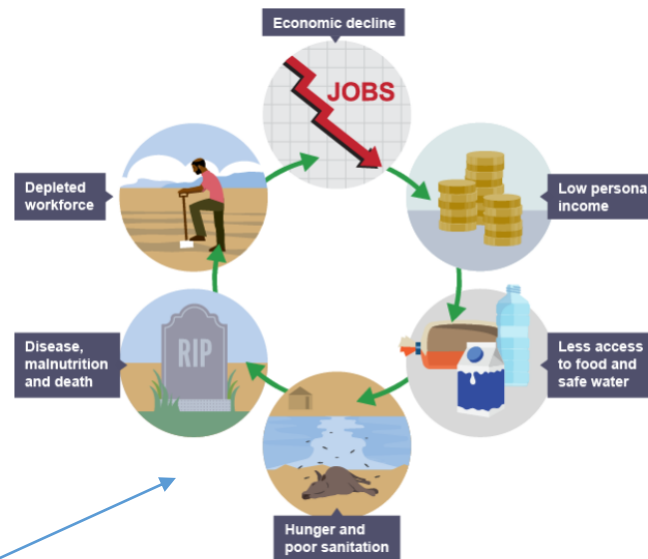
Discuss the growth, management and impact. + take the test on the website.

[How tourism can reduce the development gap - Maldives case study](#) - [Closing the development gap - AQA - GCSE Geography Revision - AQA - BBC Bitesize](#)

The cycle of poverty

For example, if a country is in a lot of debt, it cannot afford good schools. If people are poorly educated, they are less likely to understand the causes of desertification.

Desertification leads to poor crop growth and low incomes. This leads back to the country accumulating debt and the cycle continues.



BIG QUESTIONS

How do artists use painting techniques and processes?

What is special about the primary colours?

How do you make a tertiary colour?

Where do the complementary colours sit on the colour wheel and how do they relate?


How can warm and cool colours be used to create depth in paintings?

Can you demonstrate how a wide range of neutral colours can be created from the primaries?

Can you list 5 different painting techniques?

Can you apply a specialist painting techniques to your own artwork?

Overarching Big Question



Build on knowledge of colour theory learned in Year 7. Develop skills in more advanced painting techniques and media such as working with acrylics. Investigate how artists use colour and painting techniques to communicate mood and atmosphere in art and transfer this knowledge into their own paintings."

Key Skills

RECORD

I will learn to record...

- images and information appropriate to a given theme
- examples of artists work
- using wet and dry media
- building on my knowledge and understanding of how artists use paint to create meaningful work
- ideas for a painting

DEVELOP

I will learn how to develop...

- my observation skills using a range of media, techniques and processes.
- and advance my knowledge of colour theory
- my knowledge and understanding of painting styles and techniques
- my drawing and painting skills ideas in response to a given theme, linking to artists work.
- my higher order thinking skills

REFINE

I will learn how to...

- explore a range of painting techniques e.g. watercolour- wet into wet, wet on dry, scumbling, dry brush etc. acrylics- layering, blending etc.
- select ideas to adapt and improve e.g. adjustments to size, colour and composition.
- develop a piece of work from one media into another

EVALUATE

I will learn how to...

- analyse and reflect on the development of my own work, through annotation making connections to artists and suggesting ways I could improve.
- evaluate artists using analytical writing skills and forming opinions

PRESENT OUTCOMES

I will learn how to...

produce one or more finished outcomes in paint



Homework Links

Homework- tasks linked to 'Drawing and Painting' (2 hours per two-week cycle)



Key Vocabulary

I will learn the meaning of...

*Texture/Sgraffitto/
Impasto/
Complementary/
Contrast/Chiaroscuro
Composition etc. within
the context of drawing and
painting.*

EVALUATING ARTISTS' WORK

1. Describe the piece of art you are looking at
2. What is the name of the artist or type of art?
3. What art movement or culture does the art link to?
4. Research and list 5 or more things about the artist or culture?
5. What important things have happened in the country that the art comes from?
6. What has influenced the art E.g. other artists, people, personal experiences, society, culture, politics, gender, colour, pattern, movement, religion, travel, places, objects etc.
7. Describe the materials used to make the art
8. How has the art been produced?
9. What is being communicated through the art?
10. Which of these words best describes the mood of the picture? EMOTIONAL/POWERFUL/BUSY/SLOW/PEACEFUL/WARM/COLD/HAPPY/SAD/CALM/INTENSE/SCARY can you think of any other words?
11. What do you like or dislike about the picture? Explain your reasons...

ANNOTATING YOUR OWN WORK

- In this artwork I was trying to...
- The artist/culture that has influenced my work is...
- The source I have used is...
- I found the source I used at...
- In this artwork I used the technique of...
- The media I have used is...
- I like/dislike this piece because...
- My idea links to the theme because...
- I can improve this piece by...
- I could develop this work further by...

Annotate means to explain your own creations

Artist evaluation is when you write about the artist

Project evaluation is written about the whole project at the end

END OF PROJECT EVALUATION

1. Describe each stage of the project from start to finish
2. What media did you use to produce your work? E.g. Paint/Pencil/Clay etc.
3. Describe how you used different techniques in your project? E.g. painting/drawing/modelling with clay etc.
4. Which artist's culture have you looked at?
5. Write down 2 or more similarities between your work and the artist's work.
6. Which piece of your work best shows the Artist's style or the influence of another culture and why?
7. Describe some of your own ideas...
8. Have you used a primary or a secondary source?
9. Have you included the secondary source in your work? Where did you find it?
10. Imagine your final piece was displayed in a public place.... Describe the effect looking at your work might have on people and society. E.g. relax them, make them feel sad, curious, happy, angry, thoughtful, surprised, confused, nostalgic etc. explain why e.g. because of your use of colour, images, content, arrangement? etc.
11. Explain any other influences on your work e.g. personalities (*including your own*), places, memories, objects, politics, events, activities, religion, fact, fiction etc.
12. Describe how your work links to the project theme?
13. Explain what you have done well...
14. Explain how you could improve...
15. What would you do differently, if you were to repeat any part of this project?

Big Questions:

- § Can you attempt/complete a variety of fitness tests?
- § Can you name the relevant components of fitness?
- § Can you perform bodyweight exercises with the correct technique?
- § Can re-test your fitness and compare to your results from Part 1?

Key Principles of Circuit Training:

- A method training which enables you train muscular strength, muscular endurance, power or aerobic endurance.
- Participants rotate around a series of exercises (stations), including a set period of time for work and rest.
- Benefits of circuit training; working all muscle groups and components in alternate system of stations allowing recovery of muscles and capacity to exert maximum effort; facilitates anaerobic energy system.
- Can function as a skills or fitness enhancing method with use of stations.



Fitness:

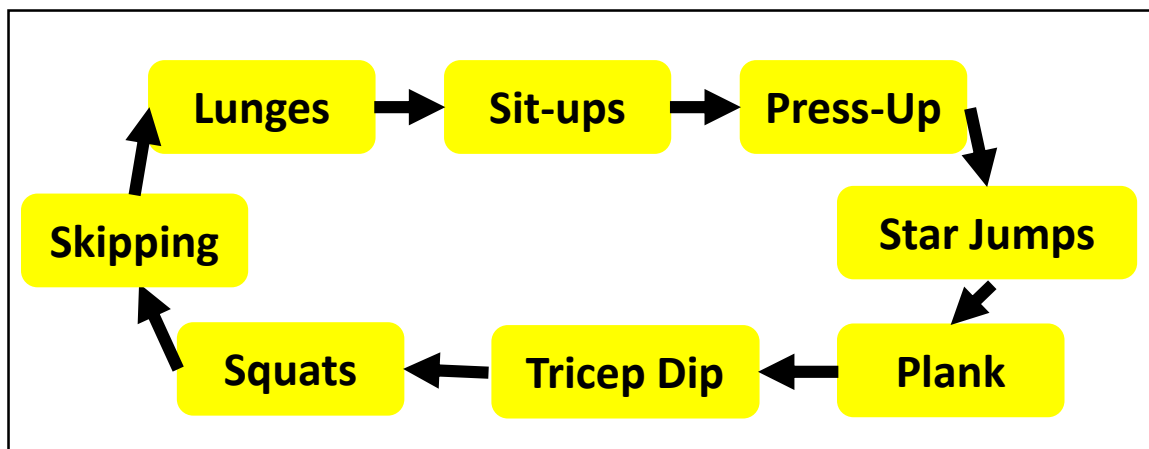
- Shows effort in exercise.
- Can conduct simple fitness tests.
- Know how to record and interpret fitness results against normative data.
- Perform exercises safely.

Knowledge:

- Identify the basic muscles and demonstrate a stretch for each.
- Know the difference between static and dynamic stretches.
- Can identify and describe the key components of fitness and demonstrate suitable exercise to improve each.

Leadership and Coaching:

- Can run a three part warm up.
- Devise and run a small circuit.
- Encourages and motivates others to work effectively.
- Good organisation and communication skills.
- Confident in different roles: Fitness Instructor, measurer, motivator.



Big Questions:

Can you make an accurate pass while running with the ball?

Can you safely and effectively make a tackle?

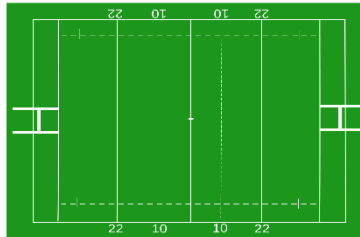
Can you safely and effectively create a ruck?

Can you use tactics to create space to attack?



Key Skills:

- Tackling: Socket to Pocket, Ring of Steel, Hit Low and Hard, Release when player is down.
- Passing: Soft Hands, Hands Up (W), Pass across Chest, Follow through to Target.
- Scrum: Used to restart the game after a knock on. Front Row (Prop-Hooker-Prop) Second Row (4-5), Flankers (Open Side - Number 8 - Blindside)
- Ruck: Contest for the ball after a tackle is made. Must come through the gate, hands out.
- Line Out: Used to restart the game if the ball goes off the field. Hooker throws the ball down the middle of the two teams' lines (Forwards).



Teamwork and Respect:

- Sets an example for others to follow.
- Very fair in competition.
- Always gracious in defeat and humble in victory.
- Works well in a team and supports their peers.
- Never argues with the referee.

Key Rules in Rugby:

- High Tackle: All tackles must be below the shoulder and you must attempt to wrap your arms around player, NO shoulder barges.
- Knock On: If you drop the ball it has to bounce backwards. Any knock on will result in a scrum.
- Pass Backwards: All passes have to go backwards. If you make a forward pass, it will result in a scrum.
- Off Side: Defenders need to make sure they are On Side, which is behind the "Gain Line".

Leadership and Coaching:

- Can run a three part warm up.
- Devise and run a small skill practice
- Encourages others
- Good organisation skills
- Good communication skills
- Confident in different roles: Coach, Referee, Scorer.



Big Questions:

- § Can I consistently rally with a partner (overhead clear)?
- § Can I serve accurately (backhand, underarm)?
- § Can I effectively play an attacking shot (drop, smash)?
- § Can apply rules and tactics effectively to score points?



Key Skills:

Overhead Clear: Force opponent to rear of court, hit at highest point, follow through and stand side on.

Smash: Aim to skim net, hit at highest point in downwards direction and transfer body weight.

Drop Shot: Stand side on, skim net and land just beyond, light tap.

Backhand Shot: Backhand grip, aim for back of court, strong follow through and stand side on

Long Serve: Drop and swing at same time, aim for back of court, stand side on and start with racket at waist height.

Short Serve: Short back swing, aim to skim net, racket in front with backhand grip.

Leadership and Coaching:

- Can compare performance using key terminology and teaching points for a variety of sports and skills
- Can use ICT to compare performance
- Know how to gain others attention



Key Rules in Badminton:

- Singles: Court long and narrow
- Doubles: Court short and wide for serving, whole court thereafter
- You can't touch or cross the net
- Can only hit the shuttle once when returning
- Games are played to 21 points
- Points are scored on every serve



Teamwork and Respect:

- Set examples to others in lessons and competitive games
- Show fair in competition
- Respect officials' decisions
- Be gracious in defeat e.g. shake hands with each other

Big Questions:

Year 7:

Can I "travel" using different techniques?

Can I work with another individual to create a balance?

Can I combine balances, jumps and travelling into a mini routine?

Can I create a routine with a peer?

Year 8:

Can I correctly take off when using the springboards?

Can I confidently take off and land correctly when vaulting?

Can I generate height to land on equipment?

Can I create a routine, which includes a jump, roll and balance?



Key Skills:

- Travelling: Moving around the hall using a variety of different, rolls, steps, slides and jumps.
- Balance: Balancing on different body parts, the amount of body parts and performing partner balances with 2 or 3 peers.
- Flight: Travelling through the air, using springboards as an aid.
- Routine: Combining these skills mentioned above to create a routine



Leadership and Coaching:

- Can run a three part warm up.
- Devise and run a small skill practice
- Encourages others
- Good organisation skills
- Good communication skills
- Confident in different coaching roles.

Key Safety Rules:

- Bare feet only
- Ensure equipment is safe and correctly put out before use
- Only 1 person at any one time on a piece of equipment
- Ensure you are confident and have the right out of support before attempting any jumps, rolls and balances.

Teamwork and Respect:

- Sets an example for others to follow.
- Very fair in competition.
- Always respect others whilst they are demonstrating their routine
- Works well in a team and supports their peers.



Big Questions:

Can you effectively dribble the ball?

Can you use a bounce/ chest or shoulder pass?

Can you effectively perform the set shot /lay-up shot?

Can you use key defensive /attacking tactics effectively?



Key Skills

- **Shooting:** Set shot: Shoot with one hand only. Bend your knees and flick your wrist. BEEF (Balance/Elbow/Eye/Follow-through). Jump shot: Release the ball at the top of your jump. Lay-up: Use the top right/left hand side of the backboard. Drive up off your right or left leg.
- **Passing:** Chest/Bounce/Javelin: Step into your pass. Always have your hands up and ready to receive the ball.
- **Dribbling:** Controlled dribble/Cross-Over/Speed/Spin: Bounce between hip and knee height. Keep the ball under control & look up.
- **Defending:** Stay between your opponent and your own basket. Move your feet. Do not reach in.



Teamwork and Respect

- Honest/Fair
- Compassionate
- Inspires others
- Speaks to peers/teacher with respect
- Demonstrates good sportsmanship

Key Rules

- Double dribble
- Jump ball
- Traveling
- Time violations
- Out of court
- Tip off
- Back court violation
- Contact fouls
- Free throws
- Side and base line ball

Coaching and Leadership

- Knowledge of rules and regulations
- Organisational skills
- Interpersonal communication skills
- Vision
- Creativity
- Humility
- Confidence

Can you research these common rules to find out more specific details?



Big Questions:

Can you perform the correct footwork technique in netball?

Can you accurately pass a netball using different techniques?

Can you demonstrate good shooting technique?

Can you apply different strategies to get free from your opponent and tactic's in a game?



Key Skills:

- Chest pass: W grip/ Step/Chest to chest/Follow through/ short distance
- Bounce pass: W grip/ Step/Chest to chest/Follow through/ Bounce before player/ short distance
- Shoulder pass: sideways on/elevation/ shoulder to shoulder/ step/ follow through/arch/ long distance
- Footwork: -Landing on alternate feet- first foot to land is the static pivoting foot - Landing on simultaneous feet – either foot can become static pivoting foot -On the move – release ball before third step
- Getting free from their marker e.g. sprint into a space, sprint and feint
- Marking a player and a player with the ball
- Shooting: balance/height/line and aim/ flick and follow/ knee extension.

Leadership and Coaching:

- To run a three part warm-up
- To show good communication skills
- To take the lead in practices
- To have the opportunity to take on different roles e.g. player, coach, scorer, umpire

Key Rules in Netball:

- Netball is a 7 a side game.
- Players are given certain positions and areas they are allowed e.g. GA, GD, C, WA, WD, GS, GK.
- The netball is not allowed to go over a third without it being touched.
- To score a goal the GA or GS must be within the semi-circle to shoot.
- You are not allowed to walk with the ball.
- You should be a metre away when defending a player with the ball.
- A centre pass is taken when a goal has been scored, it is alternated between the two teams.

Teamwork and Respect:

- Follows guidance from others
- Works well in a team
- Does not argue with the netball umpire
- Motivates others
- Fair in competition



Big Questions:

Can you effectively dribble the ball?

Can you successfully make a short, side-footed pass, and a long-lofted pass?

Can you shoot accurately and with power?

Can you use effective attacking and defensive tactics?



Key Skills:

- Passing: Use the side of your foot to give you accuracy and control of the ball.
- Dribbling: Dribble the ball close to your body to keep more control.
- Shooting: Try to keep shots low and aim for the corners. Power and accuracy are key.
- Defending: Nearest person to the ball should apply pressure on the ball by moving into a position within 2-3 yards of their opponent to close them down. Don't jump in.
Communication is key



Leadership and Coaching:

- Encourage and motivate others
- Be creative
- Display knowledge and understanding of the rules
- Show compassion towards others
- Inspire others to perform better
- Be a good role model

Key Rules in Football:

- Throw-in
- Offside
- Corner kick
- Goal kick
- Kick off
- Foul play
- Free kick
- Penalty
- Handball

Can you research these common rules to find out more specific details?

Teamwork and Respect:

- Sets an example for others to follow.
- Very fair in competition.
- Honest
- Always gracious in defeat and humble in victory.
- Works well in a team and supports their peers.
- Never argues with the referee.



Big Questions:

- Can you solve a problem as a team?
- Can you orientate a map?
- Can you take on the role of leader?
- Can you communicate effectively to help your team solve a problem?
- Can you effectively Plan, Do, and Review to overcome a problem?



Key Skills:

- To take on the principle of 'Plan, do, review' in problem solving activities
- To refine ideas and try different approaches to solving problems
- To orientate a map of the school field
- To use grid references to place markers out and to find codes
- To work as a team member
- Verbal and non-verbal communication skills



Leadership and Coaching:

- To run a warm-up appropriate for OAA
- To show good communication skills
- To consider the safety of self and others in the tasks set
- To take on a variety of roles e.g. leading, organising, managing

Key Rules in OAA:

- To follow the rules of orienteering and problem solving
- To follow the safety aspects of the tasks set



Teamwork and Respect:

- To listen to each others' opinion and discuss ideas
- To motivate others to succeed
- To cooperate with others in solving problems
- To be fair in competition



Big Questions

- 1) How do different extrinsic factors influence the risk and severity of injury?
- 2) How do different intrinsic factors influence the risk and severity of injury?
- 3) What are the key components of a warm up?
- 4) What are the physiological and psychological benefits of a warm up?
- 5) What are the key components and physiological benefits of a cool down?
- 6) What are the types and causes of acute injuries?
- 7) What are the types and causes of chronic injuries?
- 8) How can you reduce the risk and severity of an injury or medical condition?
- 9) What are common responses and treatments to medical conditions?
- 10) What are the common causes, symptoms and treatments of medical conditions?

Topic Area 1: Different factors which influence the risk and severity of injury

Key Terms:

- ✓ **Extrinsic factors** – where the factor or risk of injury comes from outside the body
- ✓ **Intrinsic factors** – where the factor or risk of injury comes from within the body
- ✓ **Contact sports** – sports where physical contact between performers is an accepted part of play
- ✓ **Non-contact sports** – sports where participants compete alternately, or are physically separated, or the rules detail no contact.
- ✓ **Hypothermia** – a dangerous drop in body temperature below 35°C.
- ✓ **Veterans** – performers above a certain age that is specific to the sport.
- ✓ **Psychological factors** – mental factors that affect a performer.
- ✓ **Motivation** – the drive to do something.
- ✓ **Arousal** – level of activation or excitement.
- ✓ **Anxiety** – negative emotional state due to nervousness.
- ✓ **Stress** – the feelings we get when we find it difficult to cope with the demands placed on us.
- ✓ **Confidence** – belief in your own ability to master a situation.
- ✓ **Aggression** – Intention to cause harm.
- ✓ **Mental rehearsal** – going over a skill in the mind before performance.

Topic Area 2: Warm up and cool down routines

Key Terms:

- ✓ **Warm up** - exercises to prepare the body for exercise so that the chances of injury or ill effects are reduced.
- ✓ **Dynamic stretches** – active stretching exercises.
- ✓ **Adrenaline** - hormone that prepares the body for exercise.
- ✓ Lactic Acid - waste product of anaerobic exercise; it causes fatigue.
- ✓ **Anaerobic** – without oxygen; oxygen is not used to produce energy during high-intensity, short-duration anaerobic exercise.
- ✓ **Cool down** - easy exercise done after a more intense activity to allow the body to gradually move to a resting condition.
- ✓ **Maintenance stretches** - stretches designed to just maintain flexibility.
- ✓ **Static stretches** – stretches where the stretched position is held for many seconds in an attempt to improve flexibility.
- ✓ **Proprioceptive neuromuscular facilitation (PNF)** - advanced form of flexibility training, involving both the stretching and contracting of the muscles being targeted.
- ✓ **Delayed onset muscle soreness** – muscle pain that starts a day or two after an exercise workout.

Topic Area 3: Different types and causes of sports injuries

Key Terms:

- ✓ **Acute injuries** – injuries caused by impacts or collisions.
- ✓ **Chronic injuries** - injuries caused by continuous stress.
- ✓ **Soft tissue injuries** - injuries to muscles, tendons or ligaments.
- ✓ **Hard tissue injuries** – injuries to part of the skeletal system, such as fractures or dislocations.
- ✓ **Strains** - injuries to muscles.
- ✓ **Sprains** - injuries to ligaments.
- ✓ **Ligaments** - tissue that connects bone to bone and strengthens joints.
- ✓ **Abrasion** - surface damage to the skin; grazes.
- ✓ **Cut** - skin wound where the tissues of the skin become separated.
- ✓ **Laceration** - a torn or jagged wound caused by a sharp object.
- ✓ **Contusion** - bruise caused by blood leaking into the surrounding area.
- ✓ **Blister** - bubble on the skin caused by friction.
- ✓ **Fracture** - partial or complete break in a bone.
- ✓ **Dislocation** - when a bone is dislodged from its position in a joint.
- ✓ **Concussion** - head injury in which the brain is shaken inside the skull.
- ✓ **Tendonitis** - inflammation of the tendons.
- ✓ **Epicondylitis** - inflammation of an epicondyle of a bone.
- ✓ **Stress fracture** – tiny cracks in a bone caused by repetitive force, often from overuse.

Big Questions

- 1) How do different extrinsic factors influence the risk and severity of injury?
- 2) How do different intrinsic factors influence the risk and severity of injury?
- 3) What are the key components of a warm up?
- 4) What are the physiological and psychological benefits of a warm up?
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- 6) What are the types and causes of acute injuries?
- 7) What are the types and causes of chronic injuries?
- 8) How can you reduce the risk and severity of an injury or medical condition?
- 9) What are common responses and treatments to medical conditions?
- 10) What are the common causes, symptoms and treatments of medical conditions?

Topic Area 4: Reducing risk, treatment and rehabilitation of sports injuries and medical conditions

Key Terms:

- ✓ **Hazard** - something that can cause harm.
- ✓ **Risk** - the likelihood of danger.
- ✓ **Risk assessment** – careful examination of what, in relation to a sports activity, could cause harm to people.
- ✓ **Electrocardiogram (ECG)** - technology used to detect the rhythm and electrical activity within the heart.
- ✓ **Emergency action plan (EAP)** - written document identifying what action to take in the event of an emergency at a sporting event.
- ✓ **SALTAPS** - acronym for see, ask, look, touch, active, passive, strength.
- ✓ **DRABC** - acronym for danger, response, airway, breathing and circulation.
- ✓ **Recovery position** – position for an unconscious person that keeps their airway clear and open.
- ✓ **PRICE** - acronym for protection, rest, ice, compression, elevation.
- ✓ **Ultrasound** - use of high frequency sound waves to diagnose and treat injuries.
- ✓ **Electrotherapy** - use of electrical energy to treat injuries.
- ✓ **Hydrotherapy** - use of water to improve blood circulation, relieve pain and relax muscles.
- ✓ **Cryotherapy** - use of cold temperatures to treat injuries.
- ✓ **Contrast therapy** – use of quickly changing temperatures from hot to cold and back again to treat injuries.
- ✓ **Analgesics** – medication used to relieve pain.
- ✓ **Cast** - hard fibreglass or plaster casing designed to prevent broken bones from moving.
- ✓ **Splint** - plastic or fibreglass support for a limb injury.
- ✓ **Sling** - support, usually of folded cloth, designed to immobilise and rest the arm.

Topic Area 5: Causes, symptoms and treatment of medical conditions

Key Terms:

- ✓ **Asthma** - a condition in which the airways narrow and swell, which can make breathing difficult.
- ✓ **Inhaler** - device that allows medicine to be breathed in.
- ✓ **Nebuliser** - machine that allows medicine to be breathed in.
- ✓ **Glucose** - simple sugar found in blood used as an energy source.
- ✓ **Insulin** - a hormone that lowers blood glucose levels.
- ✓ **Diabetes** - condition in which blood sugar levels are not regulated by the body effectively.
- ✓ **Ketones** – chemicals produced by the liver during fat breakdown.
- ✓ **Diabetic ketoacidosis (DKA)** - a condition caused by excess ketones in the blood.
- ✓ **Insulin-dependent** - another name for Type 1 diabetes.
- ✓ **Insulin-resistant** – another name for Type 2 diabetes.
- ✓ **Hypoglycaemia** - low blood sugar level.
- ✓ **Hyperglycaemia** – high blood sugar level.
- ✓ **Epilepsy** – abnormal brain activity that causes recurring seizures.
- ✓ **Seizures** - bursts of electrical activity that temporarily affect how the brain works.
- ✓ **Triggers** - things that make epileptic seizures more likely.
- ✓ **Fatigue** - a feeling of overwhelming tiredness.
- ✓ **Anti-epileptic drugs (AEDs)** - medicine taken to help control seizures.
- ✓ **Ketogenic diet** - a diet high in fats and low in carbohydrates and proteins.
- ✓ **Sudden cardiac arrest (SCA)** - a condition in which the heart suddenly and unexpectedly stops beating.
- ✓ **Commotio cordis** – a sudden trauma, such as a blow to the chest directly over the heart at certain points in the heartbeat cycle, that can cause sudden cardiac arrest.
- ✓ **Electrolytes** – minerals found in blood, urine and sweat that carry an electric charge when dissolved in water.

Big Questions

- 1) How are components of fitness relevant to different sports?
- 2) Can you justify why different components of fitness are relevant for different sports?
- 3) What fitness tests are used for each component of fitness?
- 4) Can you apply the components of fitness to a skilled performance?
- 5) What are the principles of training?
- 6) What are SMART goals?
- 7) What are methods of training and their advantages/disadvantages?
- 8) What factors should you consider when designing a fitness training programme?
- 9) How do you apply the principles of training to a fitness training programme?
- 10) How do you plan a fitness training programme?
- 11) How do you record your results from a fitness training programme?
- 12) What are the strengths and areas for improvement for your fitness training programme?

Topic Area 1: Components of fitness applied in sport

Key Terms:

- ✓ **Cardiovascular endurance** - the ability of the heart and lungs to get oxygen to the working muscles for use by the body.
- ✓ **Muscular endurance** - the ability of a muscle to sustain repeated contractions.
- ✓ **Aerobic** - with oxygen; oxygen is used to produce energy during low intensity, long-duration aerobic exercise.
- ✓ **Speed** - the maximum rate at which an individual is able to perform a movement.
- ✓ **Strength** - the extent to which a muscle or muscle group can contract against resistance.
- ✓ **Power** - the exertion of rapid muscular strength; it can be remembered as strength x speed.
- ✓ **Agility** - the ability to move and change direction quickly while maintaining control.
- ✓ **Balance** - the ability to maintain a position; this involves maintaining the centre of mass over the base of support.
- ✓ **Flexibility** - the range of movement possible at a joint.
- ✓ **Co-ordination** - the ability to use two or more body parts together (simultaneously) smoothly and efficiently.
- ✓ **Reaction time** - the time taken from the onset of a stimulus to the start of the reactive movement.
- ✓ **Maximum oxygen uptake (VO2 Max)** – maximum volume of oxygen that can be consumed per minute / unit of time.
- ✓ **Protocol** - the accepted or established procedure for conducting a test.
- ✓ **Validity** - refers to how well a fitness test measures the component of fitness that it aims to test.
- ✓ **Reliability** - a fitness test is reliable if it can be repeated and gives similar results each time.
- ✓ **Maximal tests** – fitness tests that require maximal effort in order to produce a valid, comparable result.
- ✓ **Sub-maximal tests** - fitness tests that do not require maximal exertion.
- ✓ **PAR-Q** - physical activity readiness questionnaire.

Topic Area 2: Principles of training in sport

Key Terms:

- ✓ **SPOR** - principles of training: specificity, progression, overload and reversibility.
- ✓ **Specificity** - making training specific to the movements, skills and muscles that are used in the activity.
- ✓ **Progression** – gradually making training harder as it becomes too easy.
- ✓ **Overload** - working harder than normal.
- ✓ **Reversibility** – ‘use it or lose it’. If you stop training, you will lose fitness.
- ✓ **FITT** - principles of overload: frequency, intensity, time and type.
- ✓ **SMART** - principles of goal setting: specific, measurable, achievable, realistic and time bound.
- ✓ **Continuous training** - any activity or exercise that can be continuously repeated without suffering undue fatigue.
- ✓ **Aerobic training zone** – the optimal zone of training to make aerobic gains in the body to improve cardiovascular endurance and stamina.
- ✓ **Fartlek training** - ‘speed play’, which generally involves running, combining continuous and interval training with varying speed and intensity.
- ✓ **Interval training** – any training that involves periods of work and rest.
- ✓ **Circuit training** - a series of exercises performed at work stations with periods of work and rest.
- ✓ **Plyometric training** - repeated exercises such as bounding, hopping or jumping over hurdles, which are designed to create fast, powerful movements.
- ✓ **Eccentric contraction** - when a muscle contracts and lengthens.
- ✓ **Concentric contraction** - when a muscle contracts and shortens in length.
- ✓ **Resistance training** - training that involves working against some kind of force that ‘resists’ the movement.
- ✓ **Hypertrophy** - an increase in muscle size as a result of training.
- ✓ **High-intensity interval training (HIIT)** – training that involves periods of very high-intensity work and rest.

Big Questions

- 1) How are components of fitness relevant to different sports?
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- 11) How do you record your results from a fitness training programme?
- 12) What are the strengths and areas for improvement for your fitness training programme?

Topic Area 3: Organising and planning a fitness training programme

Key Terms:

- ✓ **One rep max** – the maximum weight that can be lifted once (one repetition).
- ✓ **Adaptability** - flexibility to adapt a programme if, for any reason, the session being performed cannot be followed precisely.
- ✓ **Objective measures** – facts that provide figures/ numbers, which can allow a performer to monitor improvement.



Figure 2.36 One rep max refers to the maximum weight that can be lifted once

Topic Area 4: Evaluate own performance in planning and delivery of a fitness training programme



Figure 2.38 Stretching forms a vital part of warm up and cool down routines

Target area	Suitable activity
Cardiovascular endurance/ stamina	Specific exercises: any aerobic activity, for example cycling, swimming, jogging, walking, rowing Overload intensity: 60–80 per cent of maximum heart rate (220 – age) Time: 20 minutes or more of activity, three to four times per week
Muscular strength	Specific exercises: use of high resistance, for example weights, resistance machines, body weight Overload intensity: 70 per cent or more of one rep max (maximum lift); three sets of six to eight repetitions Time: 30 minutes or more
Muscular endurance	Specific exercises: use of low resistance, for example weights, resistance machines, body weight Overload intensity: less than 70 per cent of one rep max (maximum lift); three to four sets of 10–15 repetitions Time: 30 minutes or more
Agility	Specific exercises: shuttles or circuits that involve speed work while changing direction, for example sprinting round cones, ladder running Overload intensity: work : rest ratio of 1 : 3 (30 seconds work with 90 seconds rest between different exercises) Time: 30 minute sessions, two or three times per week
Speed	Specific exercises: use speed ladders, sprints, interval sprints Overload intensity: work : rest ratio of 1 : 3 (30 seconds work with 90 seconds rest between different exercises) Time: 30 minutes or more
Power	Specific exercises: interval training – high-intensity, short sharp activities; acceleration sprint training; plyometric training, for example box jumping and hurdle jumps Overload intensity: for example, box jumps with three to six sets of 8–15 repetitions, depending upon the stress of the exercise being done; sprints with a work : rest ratio of 1 : 3 (30 seconds work with 90 seconds rest between sprints) Time: 30 minutes or more
Balance, flexibility, co-ordination or reaction time	Specific exercises: use of predesigned circuit to include flexibility stretches, co-ordination drills or balancing exercises Overload intensity: two to three sets of 12 reps with 30-second recovery intervals Time: 30 minutes or more

Big Questions

- 1) What is the function and role of the cardio-respiratory system?
- 2) How is technology used to inform us about the cardio-respiratory system?
- 3) What are the components and role of the musculo-skeletal system?
- 4) How is technology used to inform us about the musculo-skeletal system?
- 5) What are the short-term effects of exercise on the cardio-respiratory system?
- 6) What are the short-term effects of exercise on the musculo-skeletal system?
- 7) What are the long-term effects of exercise on the cardio-respiratory system?
- 8) What are the long-term effects of exercise on the musculo-skeletal system?

Topic Area 1: The cardio-respiratory system and how the use of technology supports different types of sports and their intensities

Key Terms:

- ✓ **Atria** - upper chambers of the heart that collect blood from veins.
- ✓ **Ventricles** – lower chambers of the heart that pump blood out through arteries.
- ✓ **Valves** - prevent the backflow of blood.
- ✓ **Deoxygenated** – venous blood (in veins) that does not carry oxygen.
- ✓ **Oxygenated** - arterial blood (in arteries) that carries oxygen.
- ✓ **Arteries** - blood vessels that mainly carry oxygenated blood away from the heart.
- ✓ **Capillaries** - tiny, thin walled blood vessels that join arteries (which carry blood away from the heart) and veins (which carry blood back to the heart).
- ✓ **Alveoli** - tiny air sacs in the lungs.
- ✓ **Veins** - blood vessels that mainly carry deoxygenated blood back to the heart.
- ✓ **Trachea** - tube connecting the mouth and nose to the lungs.
- ✓ **Lungs** - large spongy organs in chest; used for gas exchange.
- ✓ **Bronchi** - airways that lead from the trachea into the lungs.
- ✓ **Bronchioles** - air passages inside the lungs that connect the bronchi to the alveoli.
- ✓ **Diaphragm** - dome-shaped muscle causing inhalation and exhalation.
- ✓ **Radial pulse** - heart rate that can be felt at the wrist.
- ✓ **Carotid pulse** - heart rate that can be felt at the neck.
- ✓ **Vasoconstriction** – reduction in the diameter of a blood vessel to reduce blood flow through that vessel.
- ✓ **Vasodilation** - widening in the diameter of a blood vessel to increase blood flow through that vessel.
- ✓ **Cardiac output** – the volume of blood that the heart is able to pump out in one minute.
- ✓ **Stroke volume** – the volume of blood that leaves the heart during each contraction.

Topic Area 2: The musculo-skeletal system and how the use of technology supports different types of sports and their movements

Key Terms:

- ✓ **Clavicle** - the collarbone.
- ✓ **Scapula** - the shoulder blade.
- ✓ **Humerus** - bone in the upper arm.
- ✓ **Radius** - bone of the forearm; attaches to the thumb side of the wrist.
- ✓ **Ulna** - bone of the forearm; forms the point of the elbow.
- ✓ **Cranium** - skull bone, which surrounds the brain.
- ✓ **Ribs** - bones surrounding the heart and lungs, forming the chest cavity.
- ✓ **Sternum** - flat bone at the front of the chest, sometimes called the breastbone.
- ✓ **Vertebrae** - many single bones joined together to form the backbone.
- ✓ **Femur** - long bone of the thigh or upper leg, which extends from the hip to the knee.
- ✓ **Tibia** - the shin bone; forms knee joint with the femur.
- ✓ **Fibula** - bone in the lower leg that forms the ankle.
- ✓ **Patella** - the kneecap; covers the knee joint.
- ✓ **Deltoids** - muscles on shoulder joint that move the upper arm.
- ✓ **Trapezius** - muscle at the top of the back that moves the scapula and head.
- ✓ **Latissimus dorsi** – muscle at the side of back that moves the upper arm.
- ✓ **Pectorals** - muscles in the chest that move the upper arm.
- ✓ **Biceps** - muscles at the front of the upper arm.
- ✓ **Triceps** - muscles at the back of the upper arm.
- ✓ **Abdominals** – stomach muscles that protect internal organs.
- ✓ **Gluteals** - buttock muscles, which are used when running.
- ✓ **Hamstrings** - muscles at the back of the upper leg.
- ✓ **Quadriceps** - muscles at the front of the upper leg.
- ✓ **Gastrocnemius** - one of the calf muscles; used in walking.
- ✓ **Soleus** - one of the calf muscles; used in walking.

Big Questions

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Key Terms (continued Topic 1):

- ✓ **Systolic blood pressure** - blood pressure when the heart is contracting.
- ✓ **Diastolic blood pressure** - blood pressure when the heart is relaxed.
- ✓ **Inhalation** - breathing in.
- ✓ **Exhalation** - breathing out.
- ✓ **Intercostal muscles** - muscles located between the ribs.
- ✓ **Diffusion** - the movement of a gas from an area of high concentration to an area of low concentration.
- ✓ **Wearable technology** - technology worn on the body during exercise to provide data.
- ✓ **Laboratory-based technology** - the use of technology inside a laboratory to provide data.
- ✓ **Field-based technology** - technology that can be used to provide data outside of a laboratory in the setting where sports take place, for example a football pitch.
- ✓ **Spirometer** - machine that produces a spirometry trace of breathing volumes.
- ✓ **Vital capacity** - amount of air expelled from your lungs when you take a deep breath and then exhale fully.
- ✓ **Pulse oximeter** - device used to measure how efficiently oxygen is being carried to the extremities by the heart (blood oxygen level).



Figure 3.18 Smartwatch

Topic Area 3: Short-term effects of exercise on the cardio-respiratory and musculo-skeletal systems

Key Terms:

- ✓ **Anticipatory rise** - slight increase in heart rate before exercise.
- ✓ **ROM** - range of movement.

Key Terms (continued Topic 2):

- ✓ **Synovial joint** - a freely moveable joint.
- ✓ **Ball and socket joint** - ball shaped end of bone fits into the socket of another, for example the hip.
- ✓ **Hinge joint** - end of bone fits against another bone allowing movement in only one direction, for example the knee.
- ✓ **Gliding joint** - one bone can slide over another, for example the carpals in the wrist.
- ✓ **Pivot joint** - rounded end of one bone fits into a ring formed by the other bone, for example the vertebrae of the neck, which allow head rotation.

Topic Area 4: Long-term effects of exercise on the cardio-respiratory and musculo-skeletal systems

Key Terms:

- ✓ **Fast twitch fibres** - muscle fibres that contract quickly and/or with high force; used during high-intensity work.
- ✓ **Slow twitch fibres** - muscle fibres that contract with a low force but do not fatigue quickly.
- ✓ **Bradycardia** - decrease in the resting heart rate because of training.
- ✓ **Goniometer** - device used to measure flexibility (range of movement at a joint).
- ✓ **Lung capacity** - the amount of air the lungs can hold.
- ✓ **Tidal volume** - the amount of air breathed in and out at rest.
- ✓ **Bone density** - the amount of bone mineral in bone tissue.
- ✓ **Capillarisation** - an increase in the number of capillaries as a result of endurance training.
- ✓ **Heart disease** - when the heart's blood supply is blocked or interrupted by a build-up of fatty substances in the coronary arteries that supply the heart with blood.
- ✓ **Heart attack** - medical emergency in which the supply of blood to the heart is suddenly blocked.

Religion
Buddhism

Year: 9
Term: 4

Big Questions

1. **Who is Siddhartha Gautama?**
2. **What did Siddhartha Gautama believe?**
3. **What is enlightenment?**

What are the 4 sights?

Siddhartha Gautama grew up in the palace with his father who was king. When he left the palace he saw 4 sights that changed his life forever. These four sights were:

Sickness

Old age

Death

Holy man

Siddhartha didn't like that there was all this suffering so he left in search for meaning and purpose to life.

Asceticism

To be an ascetic is to avoid all forms of pleasures or luxuries in life. After he had seen the four sights the buddha tried to be an ascetic but decided that this was not the way to achieve enlightenment.

Enlightenment and the 3 watches of the night

The buddha found enlightenment through meditation. He decided that he would not move until he had achieved it. He had got rid of the three poisons in his body (greed, ignorance and hatred). He had avoided the temptations of mara and when he became awake he achieved enlightenment.

The buddha realised three things. These are called the watches of the night:

Buddha made three realisations when he was meditating these are:

1. **FIRSTLY** Gautama gained knowledge of all his previous lives
2. **SECONDLY** Gautama understood the repeating of the cycle of life, death and rebirth – understood KARMA (action) and ANATTA (no fixed self)
3. **THIRDLY** Gautama understood why suffering happens and how to overcome it

What are the 4 noble truths?

1. We all suffer
2. We suffer because of our wants and desires
3. We can stop suffering if we want less.
4. We can achieve this by following the 8 fold path.

Mara and the 4 temptations

He tried to stop him in the following ways:

- He sent his daughters down to seduce Siddhartha
- He sent his armies to attack Siddhartha
- He offered Siddhartha control of his kingdom
- Mara himself tried to attack him.

Key words:

Enlightenment – to be awoken or become aware of reality.

Sangha – the Buddhist community

Dharma – nature of reality the buddha's teachings.

Meditation - Meditation is a practice where an individual uses a technique – such as mindfulness, or focusing the mind on a particular object, thought, or activity – to train attention and awareness, and achieve a mentally clear and emotionally calm and stable state.

Karma – word that means action – every action has a consequence.

Reincarnation – the idea you are reborn into a new body when you die.

Precept – a rule.

Samsara – the life cycle within dharmic religions.

Asceticism – avoiding luxuries or pleasures for spiritual gain.

Quick facts!

Holy book – various – Vedas
Dhammapada.

Age of religion- 2500 years old

Place of worship – Vihara

Name of followers – Buddhist

Number in the UK – 238,626

BIG QUESTIONS

What is characterisation?

How can physical performance skills and vocal skills be incorporated into a performance?

How can drama techniques be incorporated into a performance?

Why is discipline important in a performance?

What are the differences between the two styles – Naturalism and Abstract Theatre?

What is the difference between devising and a scripted performance?

Performance Skills

Planned Movement	Physical actions that are organised prior to the performance and then rehearsed.
Positioning	Arranging an actor in a place/way. Where the actor is facing.
Posture	How the body is held.
Body Language	Movements with the body, that communicate feeling.
Eye Contact	Where the actor is looking.
Space	How the environment is used.
Levels	How high or low an actor is positioned on stage.
Vocal Skills	How the voice is used to communicate emotion and character.
Gestures	Using your hands to further express meaning or emotion.
Facial Expressions	Showing mood through the movement of your face.

3PBEDSLVGF

Physical performance skills are the ways the use body can be used to communicate character or meaning.

Always remember to remain disciplined when performing.

Vocal Skills

Pitch	How high or low your voice is.
Pace	How fast or slow you speak.
Pause	A moment of silence.
Projection	How far and clearly you speak enable your voice to travel across the room.
Tone	Using your voice to show mood.
Emphasis	Exaggerating particular words or phrases in a sentence.
Accent	A distinctive pronunciation which shows location. This can be linked to country or area.
Volume	How loud or quiet you are speaking.

4P'STEAV

The way in which the voice is used to communicate. Vocal skills can be used to communicate character. The more the audience can understand about a character, the greater the understanding of the narrative of the performance.⁵⁰

Drama Techniques	What would it look like on stage?
Thought Track	Character telling their thoughts to the audience
Monologue	A speech spoken by one character
Choral Speaking	A group of actors speaking at the same time
Slow motion	Slowing movement down
Flashback	A scene from the past
Cross Cutting	Mixing up the order of scenes
Narration	A spoken commentary for the audience about the action on stage
Organic Sound	A sound made by the actors (not recorded)
Synchronisation	Actors moving at the same time
Canon	Moving one after the other
Multi-role	One actor playing more than one role
Hot Seating	Questioning an actor in role
Still Image	A frozen moment in a scene
Physical Theatre	Using your body to create objects
Mime	Performing an action with no props
Mirroring	2 actors facing each other moving at the same time
Split Role	One role that is played by more than one actor
Flash forward	A scene from the future
Tableau	A still image that captures the whole scene/story
Repetition	A sound/movement that is repeated
Marking the Moment	When a moment in a scene is emphasised

Style: Naturalism

Naturalism uses realistic acting and in-depth characterisation.

- Subtext
- Relationships
- Personality
- Situation
- Motivation

Movement is planned carefully, making sure every action has a meaning behind it.

Set/costume/props/sound are used as part of a Naturalistic performance however drama techniques are NOT used!

Style: Abstract Theatre

Theatre that is non-naturalistic.

Drama techniques are included in performances to present a narrative or theme in an alternative or unconventional way.

Drama techniques are used to enhance an abstract performance, making it more engaging for the audience.



BIG QUESTIONS

Why should a dancer warm up?

What are the physical effects of a warm up?

What are the mental effects of a warm up?

Give an example of an effective warm up. Give specific exercises.

Why should a dancer cool down?

If a dancer injures themselves, what should they do? What process should they follow?

Before dancing, what aspects of safe practice should a dancer consider?

What is the correct attire for a dancer to wear?

What are the risk factors you would associate with getting an injury?

Why should you warm up and cool down?

It is important for dancers to warm up before any dance activity in order to prepare the body for longer and global movements and help to decrease tension in the muscles and joints.

Through this preparation you can ensure you are able to move without stress and strain during activity. A safe warm up gradually increases the body temperature to a optimal working level and helps to avoid injuries.

The cool down is just as important after dancing as this can help to reduce muscle soreness and speed up the recovery process after the activity.

You should never feel tired after the warm up, it should always contain simple or low impact movements with no fast changes of direction. The movements should be controlled, continuous with the correct alignment to reduce the risk of injury. A warm up should include exercises for ankles, knees, hips, spine, shoulders, elbows and wrists with 6-8 repetitions of each exercise. By the end of the warm up you should feel warm, relaxed and ready to start dancing Professional Performers should conduct a warm which lasts for a minimum of 30-40 minutes each time.

Tips for dancers:

- Make sure you move into the stretch slowly, hold it still, and move out of the stretch slowly.
- Breathe normally and emphasise the stretch when exhaling.

An effective warm up should:

- Prepare dancers both mentally and physically
- Improve performance and reduce prevalence of injuries
- Increase coordination and proprioception
- Increase heart rate and blood circulation gradually
- Increase body temperature
- Permits freer movement of the joints
- Improves the effective muscles actions
- Reduce the risk of injury
- Improves the transmission of nerve impulses
- Should mobilise all the joints that are to be used during the dance class/performance.

The cool down is just as important as the warm up

If the activity stops suddenly the blood will pool within the muscles rather than return the blood to the brain, this will cause dizziness.

Dancing increases adrenaline and endorphins (hormones) in circulations which can lead to restlessness and sleep. Increase in waste products such as Lactic Acid can cause stiffness and soreness as well as cramps and muscle spasms. By gradually slowing your movements the breathing rate will decrease and reverse the warm up process. Extra soreness may occur due to the intensity of the exercise or unfamiliar movements performed. Stretching should also be part of the cool down process. If you are still sore the following day, doing some light/ gentle exercise and stretching may help.

INJURY:

If you injure yourself when dancing, suggestions include:

- Stop if you feel pain. Continuing to dance will only make the injury worse.
- Treat all soft tissue injuries (such as bruises, sprains and strains) with PRICED. Using these immediate first aid measures can relieve pain, limit swelling and protect the injured tissues, all of which help speed healing.
- Seek advice from your doctor as soon as you can. A proper diagnosis is important.
- Don't resume dancing until you have fully recovered from your injury. Returning to dance too soon will turn an acute injury (an injury that occurs suddenly) into a chronic injury (an 'overuse' injury that gradually worsens over a long time).

If a dancer appears to have an injury – apply

P – prevent the injury from spreading further

R – Rest

I – Ice

C – Compress

E – Elevate

D – Doctor

The ice causes the blood vessels to narrow therefore limiting any internal bleeding at the injury site. Ice should be applied immediately to the area for 10-15 minutes and repeated every 2-3 hours for 24 to 48 hours. It is important to only ice a new injury; applying heat can make the injury worse. It will increase bleeding in the area and cause further inflammation, which could make the injury worse.

Safe Practice:

- awareness of correct alignment – eg: knees over toes
- technical accuracy – eg: bending knees and using hands to safely lower to the floor
- Appropriate environment: flooring, area, no trips or hazards, correct temperature, mirrors
- Appropriate attire

Dance Attire:

includes dance wear, footwear (bare feet), hair up and absence of jewellery

- Proper dance attire enables the teacher to see the dancers' positions and movement in order to give necessary corrections for the benefit of the dancer's education.
- It establishes professionalism in the studio
- is safer for your dancer as sometimes improper attire can become a slipping hazard.
- It ensures that their clothing will not be a distraction to themselves or others in class.
- Appropriate wear means dancers don't need to worry about their midriff showing when dancing or lifting their arms.
- Dancers are able to move more freely

Homework Links

Nutrition:

https://www.richardalstondance.com/sites/default/files/downloads/RADC%20Nutrition%2026%20Hydration%20Advice%20for%20Dancers_0.pdf

Injury:

<https://www.betterhealth.vic.gov.au/health/HealthyLiving/dancing-preventing-injury>

Youtube – use to find warm up / cool down examples

Key Vocabulary

You must be able to identify and define **ALL vocabulary listed and be able to identify specific examples.**

Dance Injury Risk Factors

Some of the factors that can increase your risk of dance injury include:

- **Inexperience** – beginners may be vulnerable to injury because they don't have the skills or technique to meet the physical demands of their chosen dance style. Make sure you follow the instructions of your dance teacher.
- **Poor fitness** – weak muscles are more likely to be injured when challenged or stretched. Controlled progressions will improve your fitness and muscle strength.
- **Poor technique** – for example, bringing your foot down to the floor with more force than necessary can injure soft tissue and bone.
- **Poor posture** – weak muscles in the back and abdomen increase the risk of injury to all areas of the body including the spine and legs.
- **Fatigue** – a tired dancer tends to lose form. Falls and injuries caused by sloppy technique are more likely.
- **Hazardous environment** – for example, worn or ripped carpet, hard floor, uneven floor, spilt liquids or fittings close to the dance area such as stairs.
- **Overtraining** – dancing for too long or too often can lead to a wide range of overuse injuries. Shin splints and stress fractures in the feet are common dance-related overuse injuries.
- **Failure to rest an injury** – returning to dance before an existing injury has healed can aggravate the condition.
- Some of the factors that can increase your risk of dance injury include: **Inexperience** – beginners may be vulnerable to injury because they don't have the skills or technique to meet the physical demands of their chosen dance style. Make sure you follow the instructions of your dance teacher.
- **Poor fitness** – weak muscles are more likely to be injured when challenged or stretched. Controlled progressions will improve your fitness and muscle strength.
- **Poor technique** – for example, bringing your foot down to the floor with more force than necessary can injure soft tissue and bone.
- **Poor posture** – weak muscles in the back and abdomen increase the risk of injury to all areas of the body including the spine and legs.
- **Fatigue** – a tired dancer tends to lose form. Falls and injuries caused by sloppy technique are more likely.
- **Hazardous environment** – for example, worn or ripped carpet, hard floor, uneven floor, spilt liquids or fittings close to the dance area such as stairs.
- **Overtraining** – dancing for too long or too often can lead to a wide range of overuse injuries. Shin splints and stress fractures in the feet are common dance-related overuse injuries.
- **Failure to rest an injury** – returning to dance before an existing injury has healed can aggravate the condition.



BIG QUESTIONS

Why is it important for a dancer to keep hydrated?

What types of food include vitamins and minerals?

What does a dancer's diet look like?

Why does the human body need protein in the diet?

What are your top tips for a dancer who needs to refuel?

Why is nutrition particularly important for dancers?

Carbohydrates

Carbohydrate is the best source of fuel for exercise and supplies most of our body's energy. It is stored in the muscles and liver as glycogen. During exercise glycogen is converted into water and glucose (which provides energy). The longer and harder the exercise, the greater the demand will be on carbohydrate stores, and by the end of a class, glycogen stores will be low, or even empty, and fatigue will set in.

A dancer's diet should be derived mostly from slow energy releasing 'complex carbohydrates'. These include wholemeal and wholegrain breads, brown rice, wholemeal pasta, wholegrain breakfast cereals, starchy vegetables (for example potatoes), beans, or pulses.

Fats

Fats provide more than twice the amount of energy as carbohydrate, but are stored in the body as fatty tissue and are not a readily available energy source.

Dancers should be wary of eating too many high fat foods, as these will not give them the energy they need. However, a little fat, especially essential fatty acids, are needed to carry vitamins around the body, protect essential organs, and lubricate joints. Fats are also essential for the brain and nervous tissue.

Essential fatty acids to include in the diet can be found in oily fish like mackerel, sardines, herring and salmon, as well as in nuts and seeds. A deficiency in these essential fats can lead to health problems including dull skin, poor circulation, and hormone imbalances. Basic fats, which should be kept to a minimum, include foods like oil, margarine, butter or spreads.

Protein

We all need proteins to build strong muscles and organs, and our bodies use protein to grow and repair tissues, transport nutrients, and to produce enzymes and hormones. Strong muscles are of course vitally important to dancers, and they need to incorporate proteins into their daily diet.

Vitamins

Vitamins are required to maintain health and help prevent disease. We can get all the vitamins and minerals we need from the food we eat, and it is far more beneficial to absorb them in this way. Foods which are generally particularly good for providing a range of vitamins and minerals are fresh fruit and vegetables (especially when eaten raw or lightly cooked), wholegrains, nuts, seeds, dairy products, seafood and organ meats (for example, liver or kidneys).

- Vitamin A comes from milk and dairy foods, and is needed for growth, development and eyesight.
- 'B' vitamins come from starchy carbohydrates, meat and dairy products and help the body release and use energy
- Vitamin C comes from fresh fruit and vegetables, and is needed for healthy skin and body tissue. It also helps the body absorb iron.
- Vitamin D comes from oily fish, butter and margarine and is needed for healthy bones.

Minerals

Minerals provide the frame of the human body and are needed in small amounts.

Amongst their many roles **minerals are needed to maintain strong bones and transport oxygen.**

Three minerals which are commonly deficient in the diet and important to dancers are:

Calcium

Essential for strong bones. Female dancers in particular need to include sufficient levels to maintain healthy bones and teeth. Calcium from dairy products is easily absorbed by the intestine, making these excellent sources of calcium.

Iron

Helps to prevent fatigue. Good sources of iron include liver, lean red meat, tuna and dark green vegetables.

Zinc

Important in the immune system and for its role with enzyme activity (during the digestive process). Sources include meat,

Fibre

This 'bulk' foodstuff will help to keep things moving through the **digestive system**. Soluble fibre is found in oats and pulses, as well as all the fruits and vegetables we've been talking about. Insoluble fibre, which helps alleviate constipation and bowel upsets, is also very important and is found in bran and other wholegrain cereals.

Energy levels

We have already seen how energy stores will be depleted after exercise, and you should try to top them up with carbohydrate before the next class. This is particularly important for dancers, as exercising on low fuel reserves means you will not be able to achieve maximum performance. If a low carbohydrate diet is eaten between successive exercise sessions, glycogen stores will become progressively low and a dancer will become fatigued more quickly. Eating a diet high in carbohydrate will ensure adequate refuelling, allowing training to be continued effectively and consistently.

Practical advice for refuelling:

- Try to eat every four hours, and if necessary snack ever two hours.
- Eat two to four hours before exercising. If exercising all day take care not to overeat at lunchtime.
- Aim to eat within one or two hours after exercising, while your metabolism is at its highest, to help replenish your glycogen stores.
- Choose foods that will be quickly absorbed and digested. Be aware that carbohydrate rich foods release glucose at varying rates.
- Plan what you will eat in advance. You will be less likely to make sensible dietary choices if you are too hungry. Starvation will also lead to tiredness and inability to perform.

Hydration:

If fluid is not replaced, the dancer will become dehydrated. Muscle cramps, electrolyte deficits and muscle fatigue may be associated with dehydration. Even a 2% fluid loss of total body weight reduces the dancer's ability to regulate heat loss and cope with the physical demands of dance. Greater levels of dehydration affect strength, ability to concentrate, and risk of injury. Severe dehydration is life threatening.

Homework Links

Nutrition:

https://www.richardalstondance.com/sites/default/files/downloads/RADC%20Nutrition%20%26%20Hydration%20Advice%20for%20Dancers_0.pdf

Key Vocabulary

You must be able to identify and define ALL vocabulary listed and be able to identify specific examples.



BIG QUESTIONS

Can you identify and offer specific movement examples of the 5 basic body actions?

How do expressive skills contribute to the overall performance of a piece of dance?

How do physical skills contribute to the overall performance of a piece of dance?

What is the difference between mental skills for process and mental skills for performance?

How might a dancer improve their expressive skills?

How can a physical skill be improved over time?

Physical Skills: aspects enabling effective performance

Posture – The way the body is held

Alignment – Correct placement of body parts in relation to each other

Balance – A steady or held position achieved by an even distribution of weight

Coordination – The efficient combination of body parts

Control – The ability to start and stop movement, change direction and hold a shape efficiently

Flexibility – The range of movement in the joints (involving muscles, tendons and ligaments)

Mobility – The range of movement in a joint; the ability to move fluently from action to action

Stamina – Ability to maintain physical and mental energy over periods of time

Extension – Lengthening of one or more muscles or limbs

Isolation: an independent movement of part of the body

Expressive Skills: aspects that contribute to performance artistry and that engage the audience.

Projection – The energy the dancer uses to connect with and draw the audience in

Focus – The use of the eyes to enhance performance or interpretative qualities

Spatial awareness – Consciousness of the surrounding space and its effective use

Facial expressions – use of the face to show mood, character or feeling

Phrasing – The way in which the energy is distributed in the execution of a movement phrase

Musicality – the ability to make the unique qualities of the accompaniment evident in performance

Sensitivity to other Dancers – Awareness of and connection to other dancers

Mental Skills: skills in preparation for a performance

Systematic repetition – repeating something in an ordered way

Mental rehearsal – thinking through or visualising the dance

Rehearsal discipline – attributes and skills required for refining a performance – effective use of a rehearsal and time

Planning of rehearsal – organisation of when to go over material

Response to feedback – implementing changes and making improvements based on feedback/opinion given to you

Capacity to improve – willing to make changes and better, relearn, implement or adapt to make something better

Mental Skills: skills needed during a performance

Movement memory – the automatic recall of learned movement material without conscious thought

Commitment – dedication to a performance

Concentration – the power to focus all of one's attention

Confidence – the feeling or belief that one can have in one's performance or work

Technical Skills: the accuracy of content

- **Action Content**; 5BBA, use of different body parts
- **Spatial Content**; size, direction, level, pathway
- **Dynamic Content**; flow, speed, force
- **Relationship Content**; lead and follow, mirroring, action and reaction, accumulation, complement and contrast, counterpoint, contact, formations
- **Timing Content**
- **Rhythmic Content**

The Five Basic Body Actions: 5BBA
Jump, Turn, Travel, Stillness and Gesture

Can you define each of the 5 basic body actions?

What is the overall impact of technical skills in a performance?

What is the acronym to remember physical skills/expressive skills/technical skills and mental skills?

Homework Links

<https://www.aqa.org.uk/resources/dance/gcse/dance/teach/subject-specific-vocabulary>

Key Vocabulary

You must be able to identify and define **ALL** vocabulary listed.

You must be able to distinguish what category each skill falls under

EG: strength is a physical skill
NOT a mental skill

BIG QUESTIONS

- Can you explain why businesses use promotion?
- Can you explain the advantages/disadvantages of using different advertising models?
- Why is sales promotion used by businesses?

Key Words

- Communication
- Promotion
- Public Relations
- Advertising
- Personal Selling
- Direct Marketing
- Sales Promotion
- Public Relations

The Promotional Mix Definition:

'A combination of promotional techniques used by a business to communicate to potential consumers about their product, products or brand.'

The FIVE main elements of the Promotional Mix:



- ✓ It is important to understand that a business will use more than one method of promotion.
- ✓ Companies use a combination of elements of the promotional mix to inform, persuade and remind consumers about their products.
- ✓ By doing this companies hope to differentiate their product from competitors' products and increase demand for their products.
- ✓ The combination of elements used by a company will depend on the target market, budget and overall marketing strategy.

Homework:

Research the term 'celebrity endorsement' and choose THREE different examples.

Questions: Who is the celebrity and what product are they pictured with? Why do you think this is a positive look for the business? Explain why? Do you think it is an effective way to persuade more customers to purchase the products?

BIG QUESTIONS

- Can you explain the different methods of personal selling?
- Why do businesses use public relations promotion?
- What are the advantages/disadvantages of different methods of direct marketing

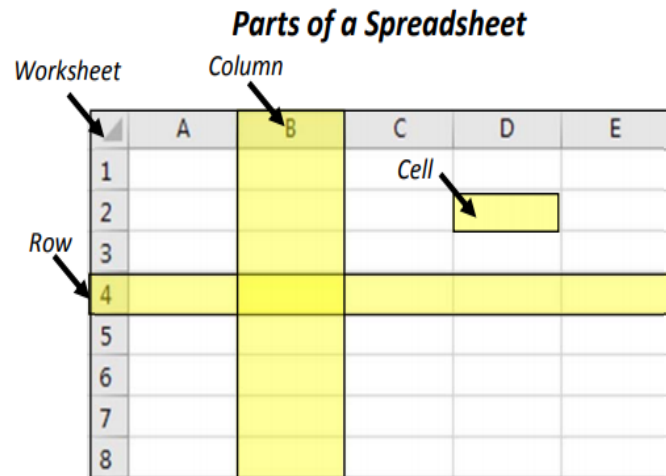
Key Words

- Target Market
- Positive public image
- Sales increase
- Customer trust

<u>Element</u>	<u>Advantages</u>	<u>Disadvantages</u>
Advertising	Good for building awareness Effective at reaching a wide audience Repetition of main brand and product positioning helps build customer trust	Impersonal - cannot answer all a customer's questions Not good at getting customers to make a final purchasing decision
Personal Selling	Highly interactive - lots of communication between the buyer and seller Excellent for communicating complex / detailed product information and features Relationships can be built up - important if closing the sale make take a long time	Costly - employing a sales force has many hidden costs in addition to wages Not suitable if there are thousands of important buyers
Sales Promotion	Can stimulate quick increases in sales by targeting promotional incentives on particular products Good short term tactical tool	If used over the long-term, customers may get used to the effect Too much promotion may damage the brand image
Public Relations	Often seen as more "credible" - since the message seems to be coming from a third party (e.g. magazine, newspaper) Cheap way of reaching many customers - if the publicity is achieved through the right media	Risk of losing control - cannot always control what other people write or say about your product
Direct Marketing	Highly effective if it reaches the targeted consumer as it personalised to satisfy their particular needs or wants	When direct marketing is received by post / email it is often regarded by the consumer as "junk mail" or "spam". Consumers often ignore direct marketers in public places.

BIG QUESTIONS

1. What is the purpose of a spreadsheet?
2. What is the difference between data and information?
3. How can spreadsheets be used to ask 'What if' questions?
4. Why do we use formatting in spreadsheets?
5. What are functions and how are they used to automatically calculate data.














Cell references begin with a letter, and finish with a number. EG: A1							
	A	B	C	D	E	F	G
1							
2							
3							
4							
5							

A range is a selection of cells.
EG: **A2:F4**

	A	B	C	D	E	F	G
1							
2							
3							
4							
5							

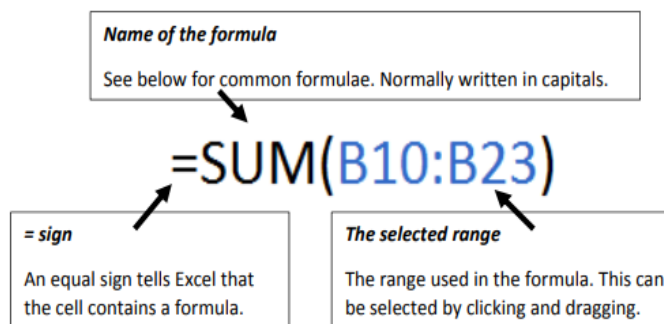
Spreadsheet vocab	
Spreadsheet	An electronic document in which data is arranged in the rows and columns of a grid and can be manipulated.
Excel	Software within the Microsoft Office package used to create spreadsheets.
Cell	A cell is a single unit of storage within a spreadsheet program.
Active Cell	The currently selected cell.
Row	A horizontal line of cells in a spreadsheet (numbers in Excel).
Column	A vertical line of cells in a spreadsheet (letters in Excel).
Cell reference	The specific location of a cell within a spreadsheet (e.g. D2)
Range	A cell reference which links to a group of connected cells (e.g., D2:F6)
Formula	An expression used in a spreadsheet to perform a calculation.
Data	Facts or information collected which has no meaning on its own (e.g., numbers or symbols)
Information	Data which has been put into context to provide meaning (e.g., a list of people's ages)
Sort	Organise data or information into order.
Ascending	Sorting data to get larger each time (A-Z and 1,2,3...)
Descending	Sorting data to get smaller each time (Z-A and 3,2,1...)
Search	Look through data or information to find results that meet a certain criteria.
Filter	Setting conditions so that only certain data is displayed.
Conditional Formatting	Changing the formatting of cells based on whether a formula is true or not.
Worksheet	An individual page within a spreadsheet document.
Workbook	A collection of worksheets that make up an spreadsheet document.



Spreadsheet formatting tools		
	Fill cell	Fills a cell with a selected colour.
	Font colour	Changes font colour to a selected colour.
	Alignment	Moves the text within a cell to the top, centre or bottom – or left, middle or right of a cell.
	Orientation	Rotates text either diagonally or vertically. Can be used for heading of columns.
	Wrap text	Wraps long lines of text into a cell, making the cell taller so that all text can be seen.
	Merge & Centre	Combines the contents of multiple selected cells and centres the content in the new cell.
	Accounting	Used to convert numbers into currency so that the data can be calculated as money .
	Percentage	Formats a number as a percentage .
	Change decimal	Changes the decimal places of a number so that the number is more/less accurate.
	Change data type	Changes the type of data contained in a cell.
	Format painter	Copies all of the formatting of a cell so it can be used in another.

Operators	
+	Adds two numbers / cells
-	Subtracts one cell or number from another
*	Multiplies two numbers/cells
/	Divides one number / cell from another one
<	Less than
>	Greater than
<=	Less than or equal to
>=	Greater than or equal to

Golden rule: every formula always starts with an =



Common formulae		
Formula name	Example (with range)	What it does
Sum	=SUM(A1:A10)	Adds together all numbers within the given range.
Count	=COUNT(B2:B14)	Counts up all of the cells within a range that have numbers in.
Average	=AVERAGE(A1:A10)	Finds the average number within a range.
Maximum	=MAX(A1:A10)	Finds the largest number within a range.
Minimum	=MIN(A1:A10)	Finds the smallest number within a range.

Homework Links

Links in Teams

Homework 1: IF & COUNTIF Functions

Homework 2: Modelling – Key Words

Homework 3: Spreadsheets in the real world

Key Vocabulary

Cell
Row
Column
Cell reference
Formula
Operators
What if
Functions
Formatting
Annotation

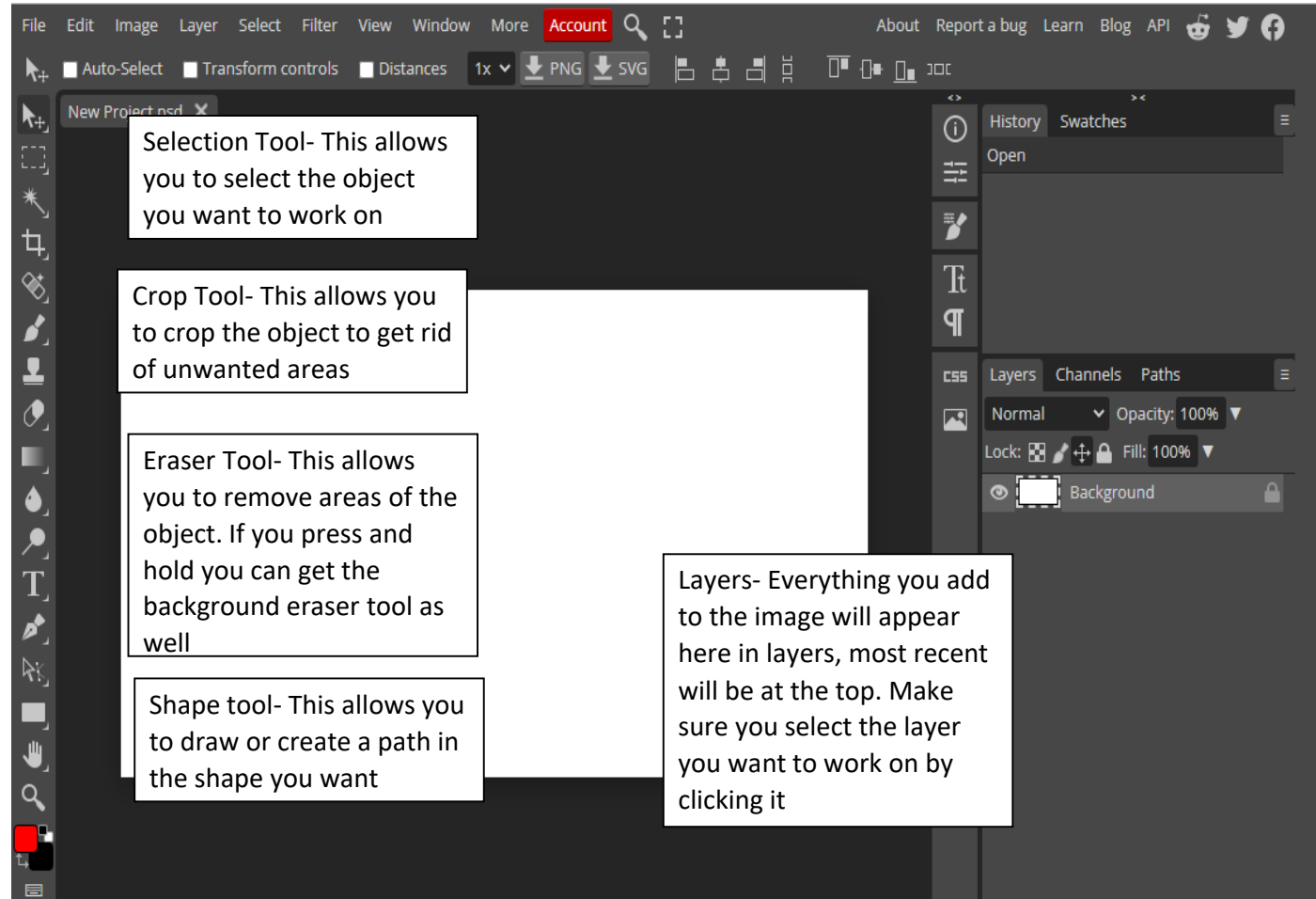
Big Questions

- How do you use the brush tool?
- How do you use the spot healing brush?
- How do you use the clone tool?
- How do you use the gradient tool?
- How do you do adjust the white balance?
- How do you crop an image in photopea?
- How do you use the magic cut tool?
- How do you use the content aware tool?
- How do you type on a path?
- How do you edit photographs on photopea?

www.photopea.com

Find the tutorials for the term by searching:

Sue Farrimond Photopea tutorials on YouTube



BIG QUESTIONS

- 1) What do you normally do at the weekend?
- 2) Where do you go at the weekend?
- 3) What did you do last weekend?
- 4) Where did you go last weekend?
- 5) How do I tell the time?
- 6) What are you going to do this weekend?

Talking about a normal weekend with my family

Le samedi (On Saturdays)	je me lève (I get up)	assez tôt, (quite early, assez tard, (quite late,		vers (around)	neuf heures (9:00) dix heures (10:00) onze heures (11:00) midi (midday)		
Le dimanche (On Sundays)	je fais la grasse matinée, (I have a lie in,)	et je me lève (and I get up)					
Le week-end (At the weekend)							
Tout d'abord (First of all)	je prends le petit déjeuner (I have breakfast)	avec mes parents (with my parents)	dans ma chambre (in my bedroom)	et puis (and then)	je me brosse les dents (I brush my teeth)	je me lave (I have a wash)	
Ensuite (Afterwards)		dans la cuisine (in the kitchen)	devant la télé (in front of the TV)		je me douche (I have a shower)	je prends un bain (I take a bath)	
Pour le petit déjeuner (For breakfast)	je prends (I have)	des céréales (cereals)	du pain (bread)	et (and) avec (with)	du café (coffee)	du jus de fruits (fruit juice)	
		des oeufs (eggs)	du pain grillé (toast)		du lait (milk)	du thé (tea)	
L'après-midi (In the afternoon)	j'aide mon père (I help my father)	je ne fais rien (I do nothing)	je lis le journal (I read the newspaper)	et puis le soir (and then in the evening)	j'écoute de la musique (I listen to music)		
	je dors (I sleep)	je fais du sport (I do some sport)	je regarde une série (I watch a series)		je sors avec des amis (I go out with friends)		
	je fais mes devoirs (I do my homework)	je fais la vaisselle (I do the washing up)	je me repose (I rest)		je vais au centre-ville (I go to the town centre)		
	je fais de la lecture (I do some reading)	je fais du vélo (I do cycling)	je surfe sur internet (I surf the internet)		je vais chez mon ami (I go to my friend's house)		
	je fais mon lit (I make my bed)	je joue sur ma PlayStation (I play on my PS)	je vais à la piscine (I go to the swimming pool)		je vais à une fête (I go to a party)		
					je vais au parc (I go to the park)		
					je vais au restaurant (I go to the restaurant)		

Key Terms

Adjective – A word used to describe. (funny, boring)

Connective – A word used to extend a sentence. (but, also)

Intensifier – A word to add detail to an adjective. (very, quite, a little)

Infinitive – A verb that doesn't tell us when or who is doing it. (to play, to watch)

Opinion – A phrase that tell us what we think of something. (I like, I hate)

Justification – A phrase used to explain an opinion, normally using because. (because it is funny)

Sequencer – A word to narrate events. (first, then, next)

Time Expression – A word used to say when or how frequently something is done. (everyday, next year)

Talking about what you did last weekend

Samedi dernier (Last Saturday)	je me suis levé(e) (I got up)	assez tôt, (quite early,)	assez tard, (quite late,)	vers (around)	neuf heures (9:00)	
Dimanche dernier (Last Sunday)					dix heures (10:00)	
Le week-end dernier (Last weekend)	j'ai fait la grasse matinée, (I had a lie in,)	et je me suis levé(e) (and I got up)			onze heures (11:00)	midi (midday)
Tout d'abord (First of all)	j'ai pris le petit déjeuner (I had breakfast)	avec mes parents (with my parents)	dans ma chambre (in my bedroom)	et puis (and then)	je me suis brossé les dents (I brushed my teeth)	je me suis lavé(e) (I had a wash)
Ensuite (Afterwards)		dans la cuisine (in the kitchen)	devant la télé (in front of the TV)		je me suis douché(e) (I had a shower)	j'ai pris un bain (I took a bath)
L'après-midi (In the afternoon)	j'ai aidé mon père (I helped my father)	j'ai fait mon lit (I made my bed)	j'ai lu le journal (I read the newspaper)	et puis le soir (and then in the evening)	j'ai écouté de la musique (I listened to music)	
	j'ai dormi (I slept)	je n'ai rien fait (I did nothing)	j'ai regardé une série (I watched a series)		je suis sorti(e) avec des amis (I went out with friends)	
	j'ai fait mes devoirs (I did my homework)	j'ai fait la vaisselle (I did the washing up)	je me suis reposé(e) (I rested)		je suis allé(e) au centre-ville (I went to the town centre)	
	j'ai fait de la lecture (I did some reading)	j'ai joué au foot (I played football)	j'ai surfé sur internet (I surfed the internet)		je suis allé(e) chez mon ami (I went to my friend's house)	
Je me suis couché(e) (I went to bed)	à (at)	onze heures (11:00)		et avant de me coucher (and before going to bed)	je me suis brossé les dents (I brushed my teeth)	
	vers (around)	onze heures et demie (11:30)			je me suis démaquillé(e) (I removed my make-up)	
		minuit (midnight)			je me suis douché(e) (I had a shower)	

How to talk in a future time frame

Je vais (I'm going)	+ infinitive
Je voudrais (I would like)	
Je veux (I want)	
J'espère (I hope)	

Le weekend prochain	Next weekend
La semaine prochaine	Next week
Ce weekend	This weekend
Ce soir	This evening
Demain	Tomorrow

Mid-Term Assessment Prep

- ☐ 90 word piece of writing, based on 4 bullet points. (Bullet points in English)
- ☐ The content (the information that you give) is worth 13 marks.
- ☐ The language (how complex your writing is, how accurate your writing is) is worth 5 marks.



HOMEWORK

Every week you will be set an assignment on sentence builders. My homework day is:

The website is:

www.sentencebuilders.com

You should have your log-in details stuck in your planner. If you forget these, you must email your teacher or ask in lesson time for these details.

Your knowledge organiser has every answer that you will need to complete your homework. Have it open when you do your homework!



SentenceBuilders

BIG QUESTIONS

- 1) What do you normally do at the weekend?
- 2) Where do you go at the weekend?
- 3) What did you do last weekend?
- 4) Where did you go last weekend?
- 5) How do I tell the time?
- 6) What are you going to do this weekend?

Talking about a normal weekend with my family

Los sábados (On Saturdays)	me levanto (I get up)	temprano, (early,) tarde, (late,)		a eso de (around)	las nueve (9:00) las diez (10:00) las once (11:00) mediodía (midday)	
Los domingos (On Sundays)	duermo hasta tarde, (I have a lie in,)	y me levanto (and I get up)				
Los fines de semana (At weekends)						
Primero (First of all)	desayuno (I have breakfast)	con mis padres (with my parents)	en mi dormitorio (in my bedroom)	y después (and after that)	me cepillo los dientes (I brush my teeth)	me lavo (I have a wash)
Luego (Then)		en la cocina (in the kitchen)	delante de la tele (in front of the TV)		me ducho (I have a shower)	tomo un baño (I take a bath)
Para el desayuno (For breakfast)	tomo (I have)	cereales (cereals) huevos (eggs)	pan (bread) pan tostado (toast)	y (and) con (with)	café (coffee) leche (milk)	zumo de fruta (fruit juice) té (tea)
Por la tarde (In the afternoon)	ayudo a mi padre (I help my father)	hago mis deberes (I do my homework)	leo el periódico (I read the newspaper)	y luego por la noche (and then at night)	escucho música (I listen to music)	
	descanso (I rest)	hago deporte (I do sport)	leo un poco (I read a bit)		salgo con mis amigos (I go out with friends)	
	duermo (I sleep)	no hago nada (I do nothing)	me meto en Internet (I go on the internet)		voy a casa de mi amigo (I go to my friend's house)	
	hago mi cama (I make my bed)	juego a la PlayStation (I play PlayStation)	veo una serie (I watch a series)		voy al centro (I go to the town centre)	
	hago ciclismo (I do cycling)	lavo los platos (I do the washing up)	voy a la piscina (I go to the swimming pool)		voy a una fiesta (I go to a party)	
					voy al parque (I go to the park)	
					voy al restaurante (I go to the restaurant)	

Key Terms

Adjective – A word used to describe. (funny, boring)

Connective – A word used to extend a sentence. (but, also)

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Time Expression – A word used to say when or how frequently something is done. (everyday, next year)

Talking about what you did last weekend

El sábado pasado (Last Saturday)	me levanté (I got up)	temprano, (early,)		a eso de (around)	las nueve (9:00)	
El domingo pasado (Last Sunday)		tarde, (late,)			las diez (10:00)	
El fin de semana pasado (Last weekend)	dormí hasta tarde, (I had a lie in,)	y me levanté (and I got up)			las once (11:00)	
					mediodía (midday)	
Primero (First of all)	desayuné (I had breakfast)	con mis padres (with my parents)	en mi dormitorio (in my bedroom)	y después (and after that)	me cepillé los dientes (I brushed my teeth)	me lavé (I had a wash)
Luego (Then)		en la cocina (in the kitchen)	delante de la tele (in front of the TV)		me duché (I had a shower)	tomé un baño (I took a bath)
Por la tarde (In the afternoon)	ayudé a mi padre (I helped my father)	jugué al fútbol (I played football)		y luego por la noche (and then at night)	escuché música (I listened to music)	
	descansé (I rested)	lavé los platos (I did the washing up)			fui al centro (I went to the town centre)	
	dormí (I slept)	leí el periódico (I read the newspaper)			fui a casa de mi amigo (I went to my friend's house)	
	hice mi cama (I made my bed)	leí un poco (I read a bit)			fui a una fiesta (I went to a party)	
	hice mis deberes (I did my homework)	me metí en Internet (I went on the internet)			fui al restaurante (I went to the restaurant)	
	no hice nada (I did nothing)	vi una serie (I watched a series)			salí con mis amigos (I went out with my friends)	
Me acosté (I went to bed)	a (at)	las once (11:00)		y antes de acostarme (and before going to bed)	me cepillé los dientes (I brushed my teeth)	
	a eso de (around)	las once y media (11:30)			me desmaquillé (I removed my make-up)	
		medianoche (midnight)			me duché (I had a shower)	

How to talk in a future time frame

Voy a (I'm going)	+ infinitive
Me gustaría (I would like)	
Quiero (I want)	
Espero (I hope)	

El fin de semana próximo	Next weekend
La semana próxima	Next week
Este fin de semana	This weekend
Esta noche	This evening
Mañana	Tomorrow

Mid-Term Assessment Prep

- ☐ 90 word piece of writing, based on 4 bullet points. (Bullet points in English)
- ☐ The content (the information that you give) is worth 13 marks.
- ☐ The language (how complex your writing is, how accurate your writing is) is worth 5 marks.



HOMEWORK

Every week you will be set an assignment on sentence builders. My homework day is:

The website is:

www.sentencebuilders.com

You should have your log-in details stuck in your planner. If you forget these, you must email your teacher or ask in lesson time for these details.

Your knowledge organiser has every answer that you will need to complete your homework. Have it open when you do your homework!



SentenceBuilders

BIG QUESTIONS

To be able to understand -

- ✓ The principles of development.
- ✓ The 5 different stages of development
- ✓ The development that children aged from birth to 18 months would typically meet across the five areas



Learning outcome A: Understand the principles of growth and development

A2 The principles of development

- Learners will understand the principles of development.
 - The skills and knowledge gained by a child over time.
 - Children acquire skills at varying rates in different areas of development.
 - Milestones, sometimes called developmental norms, indicate the expected stage of development the child may meet at a particular age.
 - Identifying current milestones and stage of development, identifying milestones and how they support progression to the next stage of development.
 - Holistic development - how different areas of development impact on each other and affect overall development

Homework

- 1.1. Explain the skills and knowledge of each aspect of development from 0-5 years
- 1.2. Explain the sequence and milestones of each aspect of development from 0-5 years

Learning outcome A: Understand the principles of growth and development

A3 Development across ages of birth to 18 months

Physical development - gross motor skills: large movement of limbs; fine motor

- skills: movement of fingers, developing hand-eye coordination:
- sequence of development from head to foot, inward to outward; from reflexes to control of body and movement
- infant reflexes - rooting and sucking, startle reflex, grasping reflex, walking reflex
- 3 months - reflexes disappear, lifts head and shoulders, watches fingers move
- 6 months - rolls and turns, sits with support, holds a toy in whole hand
- 9 months - sits, crawls, stands, passes a toy from one hand to the other, drinks from a cup with help
- 12 months - walks with one hand held, picks up small objects with finger and thumb, independent in finger feeding
- 15 months - first steps walking alone, grasps crayon in either hand and scribbles.

Homework Links

Research from the following websites-

- ✓ www.education.gov.uk
- ✓ www.foundationyears.org.uk
- ✓ www.earlyyearsmatters.co.uk/eyfs/a-unique-child/play-learning/
- ✓ <http://www.earlyyearsmatters.co.uk/eyfs/positive-relationships/key-person-attachment/>

Key Terms LA-A/B

Development - skills and knowledge gained over time

Milestone- a stage or event in a process

Holistic- parts that are interconnected

Placenta- a circular organ in the uterus of a pregnant woman that nourishes the foetus through the cord

Premature- a baby born before their expected date of arrival, medically this is before 37 weeks.

Full-term- a baby born on or around 40 weeks

Primitive -the historical development of something

Perseverance- continued effort and determination despite difficulty

Big Questions:

- What is growth and development?
- What do we mean by the word PIES
- How does development change throughout the different life stages?

**Learning outcome A: Understand human growth and development across life stages and the factors that affect it**

Life stages and their expected key characteristics in each of the PIES classifications:

Infancy (birth to 2 years):

- Physical: rapid physical growth of weight and height, development of gross and fine motor skills, following the same pattern of growth and development but at different rates
- Intellectual: rapid development of language and thinking skills such as memory/recall
- Emotional: attachments are formed, emotional wellbeing is based on bonding/attachment, security and contentment
- Social: strong dependence on adults/carers, socialisation through family, engage in solitary play

Early childhood (3-8 years):

- Physical: continued growth of weight and height, mastery of gross and fine motor skills
- Intellectual: increased curiosity, language fluency develops, strong grasp of memory/recall
- Emotional: increased independence, wider range of relationships are formed, emotional wellbeing is based on attachment, security and contentment
- Social: social circle widens and close friendships are formed, socialisation continues through family and also friends/carers, social play develops

Learning outcome A: Understand human growth and development across life stages and the factors that affect it

Adolescence (9–18 years):

- Physical: onset of puberty, differences between males and females, primary and secondary sexual characteristics
- Intellectual: complex and abstract thinking develops
- Emotional: independence increases further, more freedom to make own decisions, concerns over self-image and self-esteem may increase, emotional wellbeing is based on attachment, security and contentment
- Social: wide range of formal/informal relationships develop and have influence, intimate relationships are formed

Early adulthood (19–45 years):

- Physical: peak physical fitness, full height reached, sexual maturity reached, women at their most fertile
- Intellectual: mastery of abstract and creative thinking, careers become important, may return to education
- Emotional: independent living and control over own lives, emotional wellbeing is based on attachment, security and contentment
- Social: intimate and long-lasting relationships are formed

Homework

1.1. Design a leaflet to help support emotional development during adolescence

Key Terms:

Life stage – distinct phases of life that each person passes through

Characteristic – something that is typical of people at a particular life stage

Lifespan – the length of time for which a person lives



Learning outcome A: Understand human growth and development across life stages and the factors that affect it

Middle adulthood (46-65 years):

- Physical: at the end of this life stage the ageing process begins, menopause occurs for women
- Intellectual: can use knowledge and experience for complex decision making, may retire
- Emotional: may experience changes in self-image and self-esteem linked to retirement or ageing process, emotional wellbeing is based on attachment, security and contentment
- Social: may have more time to socialise

Later adulthood (65+ years):

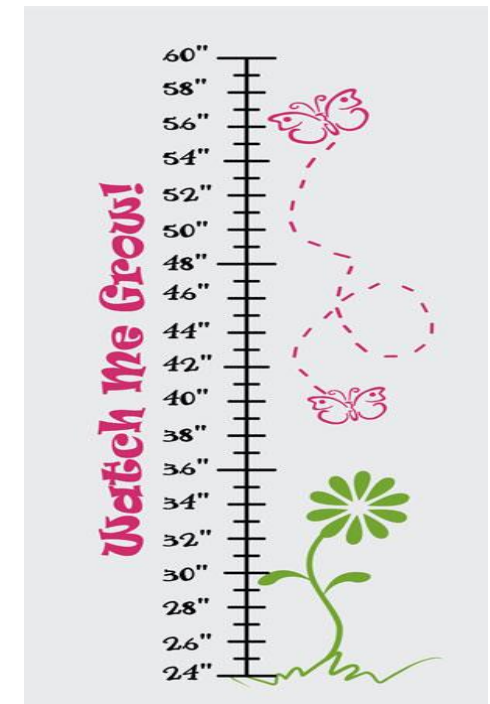
- Physical: ageing process continues, decline in strength and fitness, loss of mobility, loss of muscle tone and skin elasticity
- Intellectual: may experience decline in cognitive ability such as loss of memory/recall
- Emotional: may start to become more dependent on others, emotional
- wellbeing is based on attachment, security and contentment
- Social: may experience bereavement and reduction of social circle

Homework

1.2. Design a leaflet for a care home to support an individual in later adult hood

Research from the following websites-

- ✓ www.gov.uk
- ✓ www.nhs.co.uk
- ✓ www.tutor2u.org
- ✓ <https://cpdonline.co.uk/knowledge-base/safeguarding/child-development-stages/>



BIG QUESTIONS

Describe the process of development in artists work.

Explain why primary sources are the richest form of research.

How can Secondary sources enrich the development of 3D ideas?

Show different ways of recording your observations

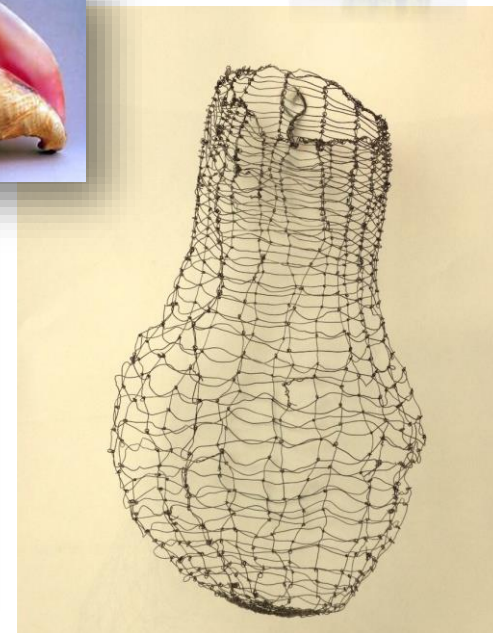
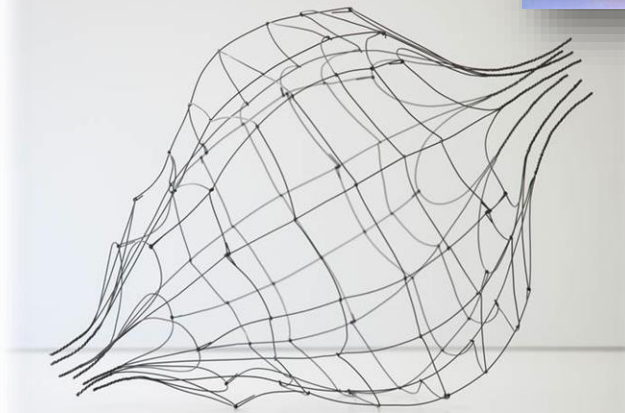
Why should you plan a wide range of ideas before selecting a final one?

How can the refining process help you to fully realise intentions?

Why is it important to evaluate?

What is a prototype?

Client Brief- Design and make a prototype of a lamp to be sold in the lighting section of the DIY Homeware store. The client is launching a range of organic themed products inspired by Biomimicry, your designs will include elements of natural forms using.



Key Skills

RECORD

I will learn to record...

- images and information appropriate for the organic form theme
- using 2D & 3D media
- using technical drawing and photography
- building on my knowledge and understanding of how artists/designers use materials and imagery to create meaningful work
- ideas for a sculpture inspired by organic forms

DEVELOP

I will learn how to develop...

- my observation skills using a range of media, techniques and processes.
- my knowledge and understanding of 3D styles and techniques
- my drawing and planning skills
- ideas in response to a given theme, linking to artists work.
- my higher order thinking skills

REFINE

I will learn how to...

- select and experiment with a range of 3D media and techniques
- select ideas to adapt and improve e.g. adjustments to size, colour and composition.
- develop a piece of work from one media into another

EVALUATE

I will learn how to...

- analyse and reflect on the development of my own work, through annotation making connections to artists and suggesting ways I could improve.
- evaluate artists using analytical writing skills and forming opinions

PRESENT OUTCOMES

I will learn how to...

Produce one or more finished prototypes in 3D



Homework Links

*Tasks linked to the theme
'Organic Forms' (2 hours per
cycle)*



Key Vocabulary

*Shape/Form/Scale/
Texture/Wire/Weave/Pri
mary Source/Secondary
Source/Isometric*

I will be expected to recall keywords learned in previous projects and use them in the appropriate context.

EVALUATING ARTISTS'/DESIGNERS' WORK

1. Describe the piece of art/design you are looking at
2. What is the name of the artist/designer or type of art/design?
3. What part of the world does the art/design come from?
4. Research and list 5 or more things about the artist/designer?
5. Describe the materials used to make the art/design
6. How has the artist/designer made the work?
7. What is being communicated through the art/design?
8. Which of these words best describes the mood of the picture/artefact?
EMOTIONAL/POWERFUL/HUMEROUS/USEFUL/SERIOUS/BUSY/SLOW/PEACEFUL/WARM/COLD/HAPPY/SAD/CALM/INTENSE/ SCARY can you think of any other words?
9. What do you like or dislike about the picture/artefact? Explain your reasons...

ANNOTATING YOUR OWN WORK

- In this piece of work I was trying to...
- The artist/designer that has influenced my work is...
- In my work I used the technique of...
- The source I have used is...
- The media I have used is...
- I like this piece because...
- My idea links to the brief because...
- I can improve this piece by...
- Next, I'm going to.....

Annotate means to explain your own creations
Artist evaluation is when you write about the artist
Project evaluation is written about the whole project at the end

END OF PROJECT EVALUATION

1. Describe each stage of the project from start to finish
2. What media/materials did you use to produce your work? E.g. Paint/Pencil/Clay etc.
3. Describe how you used different techniques in your project? E.g. painting/drawing/modelling with clay etc.
4. Which artist/designer/culture have you looked at?
5. Write down two or more similarities between your work and the artist/designers' work.
6. Which piece of your work best shows the Artist/Designers' style or the influence of another culture and why?
7. Describe some of your own ideas...
8. Have you used a primary or a secondary source?
9. Have you included the secondary source in your work? Where did you find it?
10. Imagine if your final piece was displayed in a public place.... Describe the effect looking at your work might have on people and society. E.g. relax them, make them feel sad, curious, happy, angry, thoughtful, surprised, confused, nostalgic etc. explain why e.g. because of your use of colour, images, content, arrangement? etc.
11. Explain any other influences on your work e.g. personalities (*including your own*), places, memories, objects, politics, events, activities, religion, fact, fiction etc.
12. Describe how your work links to the project brief?
13. Explain what you have done well...
14. Explain how you could improve...
15. What would you do differently, if you were to repeat any part of this project